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How long are the elementary schools and the high schools to stand apart? How long are pupils in the seventh and eighth grades to be deprived of their right to a richer course of study because of the artificial line which has heretofore cut them off from geometry and biology, from the languages and literatures of other nations, and the skilled arts which train the eye and hand? How long are we to accept with complacency the wasteful and discouraging reviews which characterize the eighth grade, and compel children to mark time on the threshold of the great change into the first year of high school? How long are we to tolerate a curriculum in the first year of the high school which seems so strange to the ordinary child that he is alienated from the pursuit of higher knowledge?

These are the questions which we are to discuss today. The answer is brief and clear. So long as you listen to the dark counsels of those who say to you that children in the upper years of the elementary school cannot do more than they are now doing, you will hold them back. So long as you let those who scoff at their fellow-teachers make you think that high schools are for the few and that elementary schools have the secret formulas of democracy,

¹ Presented as the affirmative of a debate before the Department of Superintendence of the National Education Association on February 23, 1916.

you will be content to shut your eyes to the fact that the American high school is one of the most typical expressions of our Western-world democracy. So long as you are willing to jog along with the clumsy school organization that originated in the middle of the last century, you will waste the time of children by your ox-cart methods.

If, on the contrary, you will open your eyes and realize that our high schools today register 30 per cent of all the children of high-school age, you will begin to see that the time has come to adopt a modern form of organization which will facilitate the continuation of every child's education. If you realize that the three R's have expanded in the modern world into science and civics, into art and knowledge of human life, you will be inspired with enthusiasm for the introduction of some of these better things into the earlier years of a child's life. Elementary schools should not be the homes of drudgery and the abode of the downtrodden. Elementary schools have a right to a part of the new light of a new age.

If we liberalize the elementary school, we shall also, in like spirit, liberalize the first year of the high school. When one thinks of the wall of Latin, algebra, and ancient history over which most of us climbed half a generation ago, he is certainly glad of an opportunity in mature life to knock a few stones from the foundation of that moss-grown barrier.

The answer, I say, is brief and clear. We cannot longer allow anyone to befool us into satisfaction with the present breach between the elementary schools and the high schools.

Lest there should be a few conservatives among us, let us begin by asking them what is sacred about the eight years of the present elementary school. Were these eight years determined upon after careful consideration? Not at all. The elementary school was, at the outset, an undefined and, in many respects, unlimited institution. One can remember, if his experience goes back to a district school, how the older boys and girls of the community came in during the winter term and took a little work when they were otherwise unoccupied on the farm or in the home. Pupils in such schools were frequently much older than our present eighth-grade pupils. The reason they came to the common school was that no

high school was near at hand to offer them extended opportunity. These older pupils were the forerunners of those who today are demanding a larger and a richer education than that which has heretofore characterized the grades.

Indeed, in New England, where economic conditions were favorable, the experiment was tried of a nine-year elementary school. Even today over the whole state of Maine, except in the large cities, the nine-year school is the standard school and expresses the ambition of the people for more education than can be included in the limits of a course based on the three R's.

On the other hand, there are seven-year elementary schools in the United States, which goes to show that there is nothing sacred about the eight-year school. In many of our southern states the seven-year school flourishes and is retained by men and women of this organization who are thoroughly acquainted with the eight-year school.

The famous experiment in Kansas City shows that a seven-year school is a perfectly rational and altogether economical school. So much misinformation has been circulated about the Kansas City schools that I took pains to secure from Superintendent Cammack information on the matter. The average time required by the pupils who last year completed the seventh grade in Kansas City was 7.65 years. We know that the average time required by children in eight-year schools to complete the eighth grade is eight and one-half years, so that it is seen that the Kansas City schools get their children through the elementary course a year earlier than other schools. Superintendent Cammack's figures show, also, that more of the children get through the Kansas City schools than in eight-year systems.

All these details show that the eight-year school is not a fixed law of nature. Where, then, did it come from? Sometime in the middle of the last century, when the high schools were very little developed, when the common school gave the common child all the training he was to get, the example of Europe was accepted and our eight-year school crystallized into form.

The European eight-year school is the product of an entirely different national attitude toward education. In Europe, the boy

or girl who goes to an eight-year school goes no farther. The eight-year school is a complete unit. The eight-year school of Europe is the device of aristocracy to give only a limited education to the common people.

The school of Europe which is intended for children who are going on is not an eight-year school. No child of the governing class goes to the eight-year school in Europe.

This is the thing we borrowed from Europe—an eight-year school for the poorer classes, an eight-year school which aims at a meager education, an eight-year school sharply marked off from the higher schools.

It is interesting to note in this connection that the age of fourteen, which was selected as the upper limit of compulsory education, was not determined by a careful investigation of the intellectual life of children nor of the subject-matter of instruction; it was originally established in Europe and in the traditions of our civilization because it is the period of confirmation in the church. In Europe religious education has always been a part of the work of the school, and when the child was ready for confirmation his education automatically stopped.

The student of education sees in the later developments of American schools a brilliant illustration of the biblical parable. This old European bottle, full of the New World ferment, is covered with the patches put on by conscientious but misguided hands, and yet hope grows less and less that our new ambitions can be held together in this antique vessel.

The elementary school breaks up when nature asserts itself. In the best schools of this country the upper grades are departmentalized. This means that the methods of teaching children cannot be the same in the lower grades and the upper grades. The division of the eight-year school into upper classes conducted by one method and lower classes conducted by other methods is a natural and wholesome readjustment.

Further evidence that the eight-year school is no unit appears in the fact that the present-day course of study is different from that offered in the old-fashioned unit school. One cannot keep an eighth grade alive on ditch-digging problems and definitions of

parts of speech. There are new courses in civics, new courses in local industries and in science. There is even a tendency to read some of the classics in English literature which used to be labeled as the exclusive property of the high school. The duplicating of high-school work has gone so far in the upper grades of the elementary school that harsh words are sometimes passed down by high-school teachers who find that Julius Caesar and other strictly high-school characters have been kidnaped.

What does all this duplicating mean? It means that you can surround the common people of the United States by an eight-year school, but they will break out as soon as they can. In America there is today in reality no eight-year school. The shell is broken, save only in those unfortunate localities where some arch-conservative is holding it together by devices which repudiate nature.

If we turn from worn-out European tradition to scientific studies of human nature, or even to observation such as a sensible teacher can make, we find that it is the twelve-year-old child who is putting away childish things in the first flush of adolescence. The twelve-year-old child begins to look into the larger world. He begins to think of his duties to society and himself. When he is fourteen or fifteen he will be half through the critical period of adolescence. If you want to influence an adolescent in a large way, you must begin at twelve, not fourteen.

Another product of the science of human nature is the principle of individual differences. The fallacy of believing that all pupils are exactly alike was the fallacy of a generation ago. The study of human nature and the needs of society have forced upon us a new conviction. We now realize that an individual, to be a productive member of a democratic society, must play some part other than that which is played by his fellows. In our schools we must provide preparation for the diversified duties of democratic society by giving full recognition to individual capacities and individual training. Children in the lower grades exhibit personal characteristics which deserve attention; but in those early days, when the most fundamental types of learning are being worked out, the common traits of human nature are in preponderance. By the time the

child has reached the fifth and sixth grades his personality begins to express itself emphatically in new ways. Having cultivated acquaintance with the fundamentals of knowledge, he now begins to make applications of knowledge to his own individual life, and the period of adolescence finds him ready to assume personal responsibilities and make personal decisions with regard to intellectual and moral matters. Whether we like it or not, the child in the seventh grade is growing into an individual. Whether we like it or not, his tastes and outlook will begin to mark themselves off sharply from the tastes and outlooks of other members of the class. That school alone is intelligent in its management of seventh-grade children which recognizes the fundamental principle of individual differences.

There are those among us who contend that children of this age must be driven into the same mold, that they must be made to fit some abstract notion developed in the mind of the pedagogue. Some of these conservatives may have their way for a time, but the years will prove that their conservatism is falsely conceived; that education is most appropriate to a democracy which is most broadly planned and executed.

Up to this point we have shown that reorganization is going on in our school system through the changes which are naturally developing in the elementary school. If we turn abruptly to the high school, we shall find there a tendency toward reorganization which is even more pronounced. The high school has been in some degree from the earliest period an institution organized to give to all its students a broad outlook upon life. Some high schools have degenerated into appendages of colleges and have been satisfied to offer merely a narrow preparatory course. But the typical, the vigorous example of the American high school has been characterized by the broad purpose of introducing the student to life. The great fields of human knowledge are to be canvassed by the student in series of courses which carry him through history, literature, science, and mathematics. In our modern high school there is added to this list of academic subjects an intensive study of the vernacular, and a whole series of practical and industrial arts which are to widen the student's horizon. The result of this ambitious

program is that the curriculum of the high school has come to be so crowded that it is quite impossible to meet the demands in the short four years allotted to this school. The Committee of Ten, when it made its report in 1894, saw very clearly that the secondary school cannot do the work which it must undertake and confine its program to four years. The pronouncement of that committee in this matter is perfectly definite and is as follows:

In preparing these programmes, the Committee were perfectly aware that it is impossible to make a satisfactory secondary school programme, limited to a period of four years, and founded on the present elementary school subjects and methods. In the opinion of the Committee, several subjects now reserved for high schools—such as algebra, geometry, natural science, and foreign languages—should be begun earlier than now, and therefore within the schools classified as elementary; or, as an alternative, the secondary school period should be made to begin two years earlier than at present, leaving six years instead of eight for the elementary school period. Under the present organization, elementary subjects and elementary methods are, in the judgment of the Committee, kept in use too long.¹

The secondary school is thus on record as having discovered the problem of reorganization before the lower school became clearly aware of it. Even today we have a situation which can be described in somewhat the same terms. The secondary-school people are taking up the innovations of the intermediate school or the junior high school with enthusiasm. Elementary-school officers, on the other hand, are somewhat more conservative. The elementary-school principal hesitates to lose his upper classes; the elementary-school principal is afraid that he is to be deprived of his most experienced and efficient teachers. While the high-school people are driven by sheer necessity to accept a change, the elementary-school people are not convinced, because they feel that it may be possible by makeshift devices to evade for a time the real issue.

The evidence that the high school is compelled to expand may perhaps be made more impressive by calling attention to the fact that it has already expanded at the upper end into the Freshman and Sophomore years of college. There is not an American college which does not complete the secondary course of its students. In

¹ *Report of the Committee of Ten on Secondary School Studies* (published for the National Education Association by the American Book Company, 1894), p. 45.

many institutions this is done by an evasion which can hardly be described as subtle. In these cases the college prints a long list of requirements, accepts students who do not fulfil these requirements, and then compels these students to make up conditions after entering. A condition is a confession that the college cannot demand from students its own prescribed secondary course.

Other colleges deal with the problem more directly and say to the student: Take elementary German or French, elementary history and science, in the early years of your college course, and thus complete the broad survey of human knowledge which the high school could not complete. Until you finish this introductory work we cannot let you specialize or enter the professional schools.

The evil of this situation lies not in the fact that the colleges are in reality secondary schools in their Freshman and Sophomore years; the evil lies in the fact that many colleges are making a frantic effort to force the high school to do more work. Students take not four but five and even six units in a year, in the effort to cover human experience in four years. The high school needs relief, and the broadest educational statesmanship will be exhibited in providing this relief.

It would be easy to pile up arguments for the reorganization of the high school. What does it mean that some of our better schools are organizing two-year courses? What does it mean that the elective system has come to the rescue of the first year? What is supervised study? Every reform in the high schools is an eloquent pronouncement in favor of an extension and a modification of the present school organization.

Why one should have to present all these facts in the form of arguments is hard to understand. Let one look out over our schools and he will see the change coming. This is not a prophecy; it is a fact. More than 10 per cent of the approved high-school systems in the North Central territory are at work today on the problem of organizing intermediate schools. We ought to have every ounce of our energy to devote to the discussion of the best way of carrying out the program. It is truly irritating that one must pause to say, "Come with us; it is so, it is so," when he should be in council discussing the next step forward.

Perhaps there are some who do not understand why in our day this movement is so swift. Perhaps those who hold back are merely dazed by the rapidity of the change. There is an explanation for all this, and perhaps we shall do well to give that explanation in all detail.

When the Committee of Ten made its report, it had a theoretical insight into the situation, but its contentions operated only very feebly in bringing about real changes. This teaches that change in organization does not grow out of theory, and we have new confidence in the vitality of the real changes of today. In the same way, the forces that have been operating to change the elementary school have been at work slowly until, finally, within the last few years, there seems to be a consummation of this movement with a rapidity that is literally astonishing. When the historian of education writes an account of the last five years he will point out the fact that during these years the great fundamental need of social economy bore down upon our people with unmistakable emphasis. It made very little difference in the early days of our American civilization that a student lost one or two years through our clumsy school organization; but today we are not at liberty to waste the time of students in any sense of the word. We must give to students and we must give to communities the best forms of organization possible. There have been inco-ordinations in the earlier years, as every serious writer on education has realized and pointed out. Today, the public is calling upon us, in an age of efficiency and scientific insight, to cure these inco-ordinations. We are forced to act and act promptly. What was theoretical discontent has become a real demand for improvement.

Curiously enough, this demand for economy is misunderstood by some of our conscientious colleagues. They think of intellectual parsimony when we speak of economy. They think we are going to hold back something from children. They cry out for the old-fashioned waste as the sure mark of generosity. Let us exercise what charity we can with them. Let us tell them that economy means better organization, less friction, more rapid progress, less loss. Everywhere the forces of society are set in the direction of improving the opportunities of every child. These opportunities

must be so complete and so well organized that there shall be no question at all about the investment of equipment and teaching which society is making in the schools and the investment which the child is making in time and energy. We must see to it that there is no wasteful duplication. We must fit the courses to the needs of the individual child. We must fit these courses to the needs of his growing mental life. We must change the methods of our administration at a time when it is appropriate to the child's change in mental attitude. Anyone who stands in the way of this movement is an enemy of society and an enemy of the individual child. Economy does not mean something that is narrow and limiting; it means, rather, a better organization.

Sometimes it has been said by those who oppose the intermediate school that the break between the sixth grade and the seventh grade will be widened by this new form of organization. They are saying, also, that the break between the ninth grade and the tenth grade is a menace to the fuller development of the child's education. The answer to these criticisms lies in the fact that the whole motive of this organization is to create a continuity where heretofore there has been a disjointed and wastefully duplicating system. The seventh grade is to recognize the individual child's needs, and is to give him such a course as is suited to his adolescent experience. In doing this it will effect a change in methods of operation just at the point where the child himself is undergoing a change. The child will reach out and meet the change in school organization which is provided for him. To delay this change until two years after the child is prepared for it, as we do in an eight-year school, jeopardizes the whole relation of the school and the pupil. To make the change at the time in the child's life when he is ready for it, and when the change will be congenial to his needs and intellectual demands, is to economize his life and energy in the largest sense of the word. We avoid a break by moving parallel to the child's own motion, not crossing him obliquely in the path of development. In exactly the same way, if we change the first year of the high school so as to make it fit the child's needs, we shall effect economy by removing those obstacles to the natural progress of the pupil which now exist in the first year of the high school.

The effect on teachers and school officers will be as wholesome as the effect on students. It is quite impossible to work out these changes which are contemplated in the organization of an intermediate school without showing the irrationality of all the harsh feelings and criticisms that heretofore have existed between the elementary school and the high school. We shall make for unity by cultivating in the school organization itself a new spirit of adaptation of the courses to the students. If the whole corps of teachers could be trained by this new form of organization to see that the one dominating principle of school organization which is acceptable in modern society is the principle of continuity and adaptation to the child's needs, we shall have eradicated those personal animosities which have in the past so often expressed themselves in the petty criticisms passed back and forth between shallow-minded partisans of distinct and antagonistic schools.

My time is nearly up. In these few paragraphs I have tried to outline the changes which are transforming the eight-year school into a richer school, better adapted to the children and better related to the other members of the school system. I have tried to show that the high school, too, is changing.

The consummation of these changes is seen in a new amalgamation of those grades which have until now been universally held apart. The seventh, eighth, and ninth grades belong together. No artificial line can permanently divide them. As we become more intelligent in our scientific insights, as our social life expresses itself more freely, we become vividly aware that the sixth grade is the natural point of differentiation and that the problems of secondary education unfold themselves from the child's twelfth to eighteenth years.

The new order of schools is not an imitation of an outworn model; there is here all the vigor and appropriateness of a new social life finding its large and natural expression. There is a cure in this new organization for the littleness and provincialism of those earlier days of separation.

Surely the burden of proof lies heavily on the shoulders of anyone who would oppose this movement. He must show that the old order is efficient, economical, and full of harmony. He must

make us believe that the upper years of the elementary school are like the lower years. He must persuade us that the high school can give an adequate view of life in four years.

He must not only persuade us, but he must also persuade the children in the schools and the parents in the homes. The strength of this new organization is in the fact that it meets a felt need. Where it is put into operation it holds children in the schools, equipping them for life in accordance with the laws of their natures. This movement is a great substantial social fact, and he who opposes it must answer to society.

THE BOARD OF RECOMMENDATIONS OF THE UNIVERSITY OF CHICAGO

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The increasing frequency of requests from educational institutions for information concerning the operation of the Board of Recommendations of the University of Chicago has suggested the timeliness of this article.

Technically the Board of Recommendations is composed of a representative of each of the departments in the Schools of Arts, Literature, and Science, appointed by the trustees on nomination of the President, with the President, the Recorder, the Director of the School of Education, and the Secretary of the Board as ex-officio members. In the earlier days of its history the Board met as occasion demanded to discuss questions of policy. Since the policies of the Board have been pretty definitely outlined there has been less occasion for formal meetings and the affairs of the Board have been administered by the Secretary in conference with individual members as need arose. It is to be noted that through this main channel students from all departments of the University seek teaching positions. No separate office for this purpose is maintained by the School of Education, nor does the Department of Education have a stronger influence in determining the policies of the Board than does any other department.

REGISTRATION

The Board of Recommendations is maintained by the University for the benefit of all students who have been in residence three or more quarters. This time requirement is made in order that instructors may have opportunity of satisfactorily estimating a student's ability.

The work of the Board is outlined to students interested in teaching in two general meetings: one, held in the Spring Quarter,

primarily for students about to enter on Senior College work, at which time information is given concerning the requirements for entering the teaching profession and the nature of the opportunities, immediate and ultimate, offered; a second meeting, held in the Autumn Quarter, for all students desiring to teach the following academic year, when the Secretary explains the work of the Board, the requirements for registration, the advantages of early registration, the relations of the Board to the commercial agencies, and answers general questions. By means of these two meetings and the personal conferences which follow the Secretary gets into touch with prospective teachers and advises with them in regard to combinations of subjects, letters of application, etc.

In order to be of service to those students who are at the University during only one academic year, students are permitted to fill out blanks at the beginning of their third quarter of residence, completing them later in the year.

The information on each set of blanks is gone over by the Secretary in the presence of the student when possible, and all testimonials received are read by the Secretary, so that it is possible for him to make a very definite estimate of the personality, training, and experience of each candidate.

During the year many letters are received from former students already in the field, indicating a desire to secure better positions for the coming year. These names are placed on the list as "re-registrations," and exceed in number the new registrations. Thus during any year the list of candidates consists of (1) inexperienced teachers, (2) teachers with experience before coming to the University who wish to secure a higher grade of work, (3) experienced teachers who wish to secure better positions.

At present a list is being made up of all teachers who have been unusually successful, in order that the Secretary may be able at any time to select an especially desirable person for any exceptional opening.

VACANCIES

Each vacancy reported is given careful consideration; in making recommendations for any position the Secretary, after considering the locality, the standards of the school so far as he is acquainted

with them, and the character of the community, makes the best recommendations possible for the salary offered. A letter giving general information about the candidate accompanies the confidential papers. Absolute frankness characterizes this letter. If there is anything in a student's personality which might interfere with his success in that particular position, the difficulty is stated. If an experienced teacher has had trouble in some position, and the Secretary has been unable to determine whether the responsibility should rest on the teacher or the school authorities, this fact also is plainly stated.

When students learn of vacancies through other sources, their papers are sent out, provided they state that they have heard directly from school authorities, or have heard of the vacancy through a reputable agency. In such cases the Board assumes no responsibility in regard to the fitness of the student for the position in question, but is entirely willing to answer any inquiries which school authorities may make.

The operations of an office of this sort furnish so much material which is of educational value that the desirability of instituting means for making it available for use is apparent. During the year 1914-15 an effort was made to compile statistics more comprehensive than usual, and on these statistics the following study is based. A portion of the material used is taken from the contribution of the Board of Recommendations to the forthcoming *President's Report*.

STUDY OF STATISTICS CONCERNING POSITIONS FOR 1914-15

Registration.—Table I shows the increase in registration and re-registration during the past four years. (Registrations effected during a given year are for positions during the succeeding year.) These figures are significant in view of certain statements in regard to the decrease of men in the teaching profession. Interpreted, they show that while in 1910-11 men constituted 33.8 per cent of the total registration, in 1913-14 they constituted 38.5 per cent; and that while there was a total increase in registration in the four years of over 12.5 per cent, the increase in men registered is over 33.5 per cent and of women over 1.5 per cent. The total increase

in re-registration is over 100 per cent; the increase in men re-registering is 123.9 per cent, in women 88.8 per cent. While there was an increase of 55.2 per cent in the total number of candidates available, the increase in men available was 77 per cent and in women 44 per cent.

TABLE I
REGISTRATIONS AND RE-REGISTRATIONS FOR FOUR YEARS

	1910-11			1911-12			1912-13			1913-14		
	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total
Registrations	122	236	358	152	286	438	128	240	368	163	240	403
Re-registrations	113	224	337	104	206	310	112	184	296	253	423	676
Total	235	460	695	256	492	748	240	424	664	416	663	1,079

Vacancies.—Vacancies are reported to the Board of Recommendations in three ways: (1) by school authorities communicating with the Board or with some officer of the University, who transmits the information to the Board; (2) by teachers' agencies asking for recommendations for specific positions; (3) by candidates who have obtained knowledge of vacancies either from teachers' agencies or by direct application to school authorities.

For vacancies reported under (1) and (2) definite recommendations are made by the Secretary or by the officer of the University reporting the vacancy.

The number of vacancies reported ranges, under (1), from 1,098 in 1910-11 to 1,364 in 1913-14; under (2), from 178 in 1910-11 to 116 in 1913-14. As has been indicated in the first section of this article, a record is kept of all papers sent out under (3). This number has increased from 1,729 in 1910-11 to 2,268 in 1913-14. Taking into account the fact that bureaus of a similar nature have been organized in a large number of institutions, in all of which there has been presumably a proportionate increase in business, one wonders at the continual upspringing of new commercial agencies.

The distribution of these vacancies for 1914-15 by grade of school is shown in Table II. Comparing the relative calls for men

and women with the registrations for the same year, we find that while nearly 41 per cent of the vacancies definitely specified men and over 20 per cent were open to men or women, only 38.5 per cent of the registrants were men.

TABLE II

	Univer- sity	College*	Normal	High	Grade	Unclassi- fied	Business, Secreta- rial, etc.	Total
Men.....	132	114	39	164	8	92	10	559
Women.....	22	63	54	200	86	89	6	520
Either.....	5	33	10	210	.....	26	1	285
Total.....	159	210	103	574	94	207	17	1,364

*The increased demand for men teachers is well shown by these facts: while 8½ per cent of these positions were in colleges for men, 20 per cent in colleges for women, and 71½ per cent in co-educational institutions, 54+ per cent of the calls were for men, 30 per cent for women, and 15+ per cent for either men or women.

Salaries.—The salaries pertaining to these positions were stated in only about two-thirds of the cases. Table III shows the maximum, minimum, and average salaries offered by each class of institution. It is interesting to note that the minimum salaries offered to men in universities, colleges, and normal schools are less than the minimum offered women in the same classes of institutions and that the average salary offered men in colleges exceeds the average offered women by only \$113. Possibly an investigation covering a period of years would not bear out these results.

Range of subjects.—As might be expected, the range of subjects is greatest and the number of subjects to be taught by one person is least in the universities and decreases in the one case and increases in the other through college, normal, and high school. Of the calls, 97.5 per cent from universities, 81 per cent from colleges, and 74 per cent from normal schools demanded the teaching of only one subject or of two allied subjects, as two Romance languages, English and public speaking, psychology and education. From the high schools, 47.5 per cent of the calls demanded the teaching of only one subject, or one subject combined with athletics or music; 28 per cent demanded the teaching of two academic subjects; 24 per cent, the teaching of three or more academic subjects. In almost all cases positions requiring the teaching of only one subject

TABLE III
SALARIES OFFERED BY EACH CLASS OF INSTITUTIONS, 1914-15

	UNIVERSITY			COLLEGE			NORMAL			HIGH SCHOOL			GRADE		
	Men	Women	Either	Men	Women	Either	Men	Women	Either	Men	Women	Either	Men	Women	Either
Maximum.....	2,500	1,500	1,000	2,500	2,500	1,800	3,000	2,200	2,000	1,800	1,400	1,600	1,200	2,500	.....
Minimum.....	700	800	750	600	750	675	600	800	1,000	700	550	570	750	400	.....
Average.....	1,632	1,097	1,167	1,251	1,138	1,108	1,540	1,139	1,238	1,045	795	990	1,002	643	.....

demand experienced teachers. Table IV shows the relative demand for men and women to teach single subjects in high schools.

TABLE IV

	English	History	Mathematics	Latin	German	Physics	Chemistry	Commercial
Men.....	8	13	16	3	1	9	2	5
Women.....	24	16	8	7	7	.....	.....	3
Either.....	20	7	17	3	3	2	1	18
Total.....	52	36	41	13	11	11	3	26

Attention is called to the fact that there were no calls for women who had specialized in either physics or chemistry.

Appointments.—Appointments are secured through four different channels: (1) on the direct nomination and support of the University in response to requests from school authorities; (2) on the application of the candidate in cases where the schools do not apply directly to the University, but where nevertheless the influence of the Board largely determines the appointment; (3) on nomination of teachers' agencies in cases where the schools have not applied to the University directly or where the candidates have received notice of vacancies from agencies prior to being notified of the same vacancies by the Board and are consequently financially obligated to the agencies, although the Board was a determining factor in securing the appointment; (4) on the application of the candidate (a) in places where he is known personally, (b) after he has successfully passed a city or civil service examination, (c) after he has completed the required course in a city normal school; in these cases the influence of the University is not an important factor in securing the appointment.

The distribution of appointments for the year 1914-15 according to the grade of school is shown in Table V, appointments under (1) and (2) being classed together.

In some subjects the number of appointments made is limited by the number of available candidates. For example, the supply of men to teach English in high school never equals the demand;

TABLE V

		University	College	Normal	High	High-School Principal	Grade Principal	Superinten- dent	Business and Social	Total
Directly Through University	Men.....	71	33	11	52	12	3	7	11	213
	Women.....	23	15	21	97	1	—	—	3	202
	Total.....	94	48	32	149	13	3	7	14	415
Through Teachers' Agencies	Men.....	9	14	3	16	4	2	1	1	50
	Women.....	2	8	11	43	3	—	—	2	75
	Total.....	11	22	14	59	7	2	1	3	125
Own Efforts	Men.....	2	5	1	6	3	2	8	8	37
	Women.....	1	7	4	30	2	—	—	21	90
	Total.....	3	12	5	36	5	2	8	29	127
Total	Men.....	82	52	15	74	19	7	16	20	300
	Women.....	26	30	30	170	6	—	—	26	307
	Total.....	108	82	51	244	25	7	16	46	667

the same is true of men to teach chemistry or mathematics in college, chemistry and physics, or mathematics and science, or mathematics and athletics in high school.

Comparative salaries.—The average salaries paid to men and women are shown in Table VI. In comparison with corresponding

TABLE VI

	University	College	Normal	High School	Grade
Men.....	\$1,390	\$1,293	\$1,535	\$1,127	.....
Women.....	1,135	927	1,120	846	\$779

figures for salaries during the year 1911-12 this indicates a decided gain. In the report made concerning the year 1911-12, university, college, and normal salaries are averaged together, the statement being that in normal and college positions the salaries of 109 men average \$1,229, and of 79 women, \$903; in high-school positions the salaries of 83 men average \$1,105, and of 190 women, \$834. By a corresponding grouping for the year 1913-14 the average university-college-normal salary for men is \$1,346, for women, \$1,082, showing an average gain for men of \$117, and for women of \$179. In the high schools there is an average gain of \$22 for men and \$12 for women; in the grades there is a gain of \$169 in the average paid to women. The administrative positions show an even greater gain, the average for superintendents having increased \$142, for men principals \$217, and for women principals \$119.

There is an ever-increasing demand for teachers of experience. Even the small schools paying meager salaries hesitate to employ inexperienced teachers. This may be interpreted as meaning that at some time these schools have had as teachers recent college graduates who were not successful. To obviate this difficulty as far as possible the Board has been advising its candidates to take four majors of education, which should include courses in the teaching of their chosen subjects. This covers the amount of education usually required by state boards for granting teachers' certificates. The ruling made recently by the North Central Association of Schools and Colleges, that all teachers in its territory must have received eleven semester hours' training in courses in education,

is an effort in the same direction. This training, together with the observation and practice teaching in the University High and Elementary schools, should do much toward increasing the efficiency of the young men and women entering the teaching profession.

With its present organization it is possible for the Board of Recommendations to keep in touch with a large number of its experienced teachers and thus be able to assist them to better positions and, at the same time, meet the needs of the best high schools which will consider only teachers of established success. This is a service which will be greatly appreciated by the schools as well as by the teachers, and which, it is believed, will reduce the number of agency appointments. While the relations of the Board with reputable commercial agencies remain cordial, we look forward to a time when a sufficient number of positions is reported to the Board so that it will not be advisable for our students to register with commercial agencies. Under existing conditions it is manifestly unfair for students to be under financial obligations to an agency for positions which in reality are secured through University influence, but of which an agency has been able to notify them perhaps five minutes before the Board could reach them.

The question is frequently put by sister institutions, "What efforts do you make to get in touch with vacancies?" The answer is "None." The Board has always waited to be approached by school authorities before making recommendations. Even in a case where it knew of the resignation of one of its own men it has not taken the initiative in filling the position. Possibly this attitude is too conservative. But the Board has taken the ground that recommendations would have greater weight if made in response to a definite request. It is possible that a clear understanding entered into by all appointment bureaus in regard to this and a number of other policies would be of distinct advantage to bureaus and schools alike.

A PLATFORM OF GRAMMAR

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I have recently heard of a university instructor in German who had to suspend his work for several days in order to teach the difference between a verb and a relative pronoun. He must now belong to that great body of college teachers who perfervidly believe that English grammar should be taught in the schools. Yet many secondary teachers, perhaps a majority, doubt the wisdom of devoting much time to such a lifeless and formal subject. "Formal" is the word. So damning is the epithet that some of us hardly dare mention syntax approvingly, for fear we shall be considered unfit to commune with those that are of purer fire.

We cannot do more than dimly guess what horrors would be revealed if we could gather into one report a five-minute record from every grammar recitation in the United States on a certain day. Willie in Concord would be rehearsing the quaint truth that "The definite article *the* points out one or more particular objects as distinct from others of the same kind." Susie in San Diego would briskly declare that "*Shall* and *should* are often used in the second and third persons in subordinate clauses to express volition which is not that of the subject." Perhaps thousands of children are learning the six special irregularities of weak verbs, and hundreds may be memorizing the ninety-six prepositions.

How could we expect that these crimes of pedagogy would not be committed? The rules and lists are given; they are surely not mere ornaments; there is nothing to indicate that they are for reference only; the teacher will not rashly infer that they are incitements to evil; not a hint is given that one page is more valuable than another. If, for example, we find twelve pages of *should* and *would*, and one and a half pages of predicate nominative, it is a fair inference that one subject is eight times as valuable as

the other. Teachers do so understand the emphasis. They must suppose that a renowned professor has proportioned his matter according to some well-considered scheme. Indeed, the preface says that the book is "a means for continuous study." Apparently the author—as well as all other authors—believes that foreign plurals are as important as passive voice; and that an analysis of adverb clauses as concessive, future conditional, etc., is three times as important as the matter of whether a clause is adverbial. The exercises indicate that as much drill ought to be given on indirect questions as on nominative cases.

Yet every secondary teacher of experience knows that "continuous study" is fearfully wrong. In the first place, he suspects that classifications of abstract nouns and ordinal numerals are of small value in themselves. He knows, in the second place, that time spent on genders and potential phrases is robbing a class of thorough instruction in fundamentals. For he realizes, in the third place, how long and hard is the process of making one grammatical truth take root. (Has any grammarian ever realized that years of repetition may not persuade a pupil to use *we shall* in the plainest of indicative statements? Not even the writers of our latest rhetoric can say *we should*.) As a teacher becomes more familiar with these rudimentary difficulties, he learns the necessity of spending more time on them, for he believes, fourthly, that they are important. So, leaving long stretches of text quite untouched, he concentrates on rudiments. He does not pretend that his wisdom is greater than the author's, is perplexed at finding all authors against him; but the facts of his little campaign are clear before him, and without disputing the higher strategy he abandons it and develops his own small plans.

The criterion by which he abandons or attacks is this: Whatever seems essential in a rational program of teaching composition is to be taken up thoroughly. Our combined wisdom may finally determine that nothing grammatical really functions in the art of making good sentences, that a knowledge of syntax is not comparable to perspective in painting or to finger-exercises in music. If so, the study of grammar shall surely die. The present writer believes that a study of the simpler principles of syntax is useful

as a rhetorical basis, that most matters of classifying forms are of very slight use. He presents his scheme, not with the conviction that the world must come to see it his way, but as his observation—as an outline that may be demolished by truer observation. If the destruction of this platform will contribute to our knowledge of a vexed question, he can look upon the ruins cheerfully.

The most elementary but most incorrigible error in composition is the failure to know the difference between a fraction of a sentence and two whole sentences. "No amount of ordinary correction seems sufficient to eradicate it," says the University of Illinois. The "half-sentence fault" and "comma fault" can be almost rooted out from an entire class of pupils three years below college grade by an attack based on grammar. If it can be done otherwise—say by prolonged drill in "sentence sense" without any reference to clauses, without reference to the difference between *where* and *there*, *he* and *who*—then that method of success ought to be published. I have never succeeded—that is, with a whole class—except by drill in clauses. "What is a dependent clause?" "Like what parts of speech are clauses used?" When a boy has finally learned to tell readily whether these groups of words are used like nouns, like adjectives, or like adverbs, he can be drilled in pointing them, will call himself an ass when he goes wrong on a theme, and will, if marked severely enough, quit one kind of half-sentence fault. A similar drill with verbals is necessary to remove another kind.

If every teacher had clearly in mind when he took up personals and relatives that his business was to undermine sentence-errors, he would know how much to skip and where to dwell. He would care nothing for gender, person, and number, for *thou wast*, for "self-pronouns." He would care much to show how a relative is dependent, how it and its clause can be removed bodily without destroying the sentence. He would be interested in nominative and objective, for he would be looking forward to the study of noun-clauses, to the time when pupils should see a *that*-clause as subject or object, not to be pointed even by a comma—much less by a period. His heart could firmly endure all the "formal" drill, because he would know that it was not formal at all, but was living rhetorical substance. He could have visions of shapely sentences

rising from the welter, could hear old Effectiveness blow his wreathed horn—and would not be in the least forlorn.

Suppose that we find on a theme: "Colonel Sellers was a peculiar man, if he happened to make any money, he would immediately give it away." What appeal are we to make? Doubtless a gifted teacher of long experience, who despises "formal" grammar, can devise a way of explaining that the conditional money-making looks forward to the statement about spending, and that there are two separate statements, and that a semicolon is necessary—thus avoiding the horrid nomenclature. But he is only doing without names what we average teachers, appealing to literal minds, do with names. Grant that his result is better for the soul of a bright pupil; we have still to ask: What about the total of good to be obtained by a thousand ordinary teachers who attempt to follow him without his special skill? The question is of the greatest moment, yet national councils have hardly begun to ask it, and the answer will long be in doubt. It must be obtained. Without it no procedure will be secure. My own guesses are (1) that only a small percentage of teachers make for themselves any complete explanation of what a sentence-error is; (2) that most of them have a horror of a grammatical treatment; (3) that in avoiding the clause drill they wander amid a tangle of impressionism, not guiding pupils to clear understanding. In brief: The unusual teacher's success is due (though he may not know it) to an understanding of clauses; the novice fails because he is ignorant of how to handle clauses.

One who knows quite accurately how to form sentences in accordance with the arbitrary canons may never have so formulated his knowledge that he can present a scheme of it to others. He cannot find a clear analysis in any grammar. The grammatical surveys in rhetorics are misleading. The text I have used for a dozen years lumps together *yet* and *indeed* as connective adverbs before which a semicolon is "preferable"—an observation which could be paralleled for acuteness by the statement that sleep is "preferable" before morning and evening. The comparison is meant to be exact, is penned after deliberation, is not an attempt by a plain citizen to poke fun at a professor. I am pleading that

pupils must be taught that *indeed* is as independent as *it*, that *yet* is a conjunction like *but*, so that they may know assuredly that a semicolon is *absolutely necessary* with one word and is never essential with the other. This is the fact of normal composition in schools, just as it is the fact of a normal schoolboy's life that he *must* sleep before morning and *may* sleep in the afternoon if peculiar circumstances make it advisable.

I know by bitter experience how petty, how controversial, this appears to artistic minds. A dozen times since I began this screed I have thought, "What's the use? Who cares? It's like trying to interest social reformers in rats." And that very simile has given me heart to take up the pen again. For diseases that waste our national vigor can be contended against only after some dirty-aproned physician has dissected *Rattus* or *Stegomyia*. My laboratory may smell of dead *yets* and *indeeds*, but I verily believe they are the carriers of dread contagion, and that if we know about them we shall give up exorcism and fumigation, and shall gain health and prosperity by exterminating pests. Half the college students in the country are debilitated in their sentence-making organs. Is this a visitation of divine wrath? an undiagnosable illness? a "miasma" against which we should burn sulphurous wrath? or an unescapable contagion which we ought to alleviate by a diet of literary ambrosia? My test tubes assure me that the plague is directly traceable to a bacillus, *Ignorantia grammatica*. I have demonstrated it on tens of thousands of themes; it always breeds true; its presence in a human brain always develops sentence-errors; when it is removed from a boy, he no longer writes sentence-errors. My antitoxin is not a panacea. It no more produces graceful sentences than any specific remedy causes general bodily vigor. It does no more than rid the system of one malady.

This platform is no recipe for increasing the mental robustness of the race. Just as it may be true that our average of physical fitness has been lowered by artificial aids against disease, so it may be true that the injection of grammatical accuracy results in the ultimate weakening of aesthetic vitality. I have never observed the least indication of such after-effects, nor can I conceive that

they will occur. But that point is not here at issue. Nor are we debating whether sentence-errors really signify in the sight of heaven. To me personally the difference between a comma and a semicolon is less than nothing. I only feel that if a youth is *unable* to grasp the distinction he is mentally unworthy of a diploma—or else his teacher is unworthy of a salary. I note that the colleges and taxpayers demand that such knowledge shall be imparted, and that we are not meeting the demand successfully. What follows is not a symposium of heart-throbs, but a method of deserving a hundred dollars a month.

One inevitable cry of dismay must be forestalled: "Oh, this is an apotheosis of drugs! This will encourage novices to herd their pupils out of the pleasant pastures and confine them amid antidotes and syringes." Peace! No medical thesis ever turned a lover of green fields into a worshiper of microbes. Anyone who can be turned from the paths of good sense by this essay is already unfit to teach English.

One principle underlies the whole platform: Pupils must know what words *do* in sentences. That "if he happened to make money" will illustrate. What does *if* do? It joins its clause to *would give*. A pupil who has been taught to find out instantly what *if* does is prepared to understand why the comma before it is the saddest of blunders. *Logically* the comma is right, because what follows is subordinate in thought, explaining how the Colonel was peculiar. The Frenchman may indicate this subordination by a comma. We are not allowed to. Our pointing here depends upon *grammatical* dependence or independence. And this arbitrary syntactical distinction is never revealed by any amount of drill in such mental states as "noncommittal present conditional."

If is usually a conjunction, but we should always discredit the persistent notion that a word is anything in itself. The letters *t*, *h*, and *e* sometimes form an adverb and sometimes an article. To teach that "*concerning* may be classed as a preposition" is to damage the youthful mind, because it conveys the impression that a word is something in itself; whereas it really is a preposition if it *does* prepositional work. "What does it do? Then what is it?" Any deviation from this line of attack is turning a poor child's

logic topsy-turvy. To expound "infinitive clauses" or "infinitives as modifiers" or "intransitive passive" (*sic!*) is to double on our own tracks, eluding and baffling the pupil. Very few English forms are anything in themselves. *Asked* is nothing till you know what it does, *but* must be seen in action, *to sleep* is probably not an infinitive—and so on forever. There is hardly such a thing as an intransitive verb. I read in my text that "Roared what?" would be an absurdity, but Shakespeare made somebody "roar these accusations forth." To classify *roar* as intransitive and then to say "here used transitively" is to spoil our own efforts. "What does it do? Then it is transitive."

This is not asserting that all classification is worthless; it is simply saying that to learn about kinds is of small value compared with learning about function, and that the difficulties of teaching a few necessities of syntax are so great that no ordinary school has time for anything more. Not one of us realizes how hard it is to make a whole class able to distinguish between subject, object, and predicate nominative. Scores of times I have seen normally bright boys in a third year of review tripping over "up flew the windows" or learning all over again why a gerund is not a participle.

What are those few necessities? We might almost reply, "Whatever will explain clauses." You can never know the nature of clauses until you understand the uses of nouns, adjectives, adverbs, and relative pronouns. You can't tell a clause from an independent sentence until you have studied personals. You can't know about nouns and pronouns except in connection with transitive and intransitive verbs. Phrases will always be clauses until you study prepositions. Clauses will never be clauses until you investigate conjunctions. And there you are. Through every inch of the drudgery you can see clauses. Familiarity with them will breed some ease in writing complex sentences, and so make style less childish. Knowledge of them will put counterfeit sentences out of circulation. In your toiling with subject and object you have a purpose, a prevision of how you are going to destroy such monsters as "What you say, doesn't count, it's what you do." Ellipses are not futile puzzles if you are providing against "Why not, there's no danger." You can even behold above the meanest

adverb a light which will show young intellects why they must not let a weak adverb clause stand all alone between periods.

What have you supposed you were doing, brother? raising a dust for no particular purpose? No wonder you have worked sullenly. If you knew that every motion was enabling the next generation to command a more decent style, shouldn't you feel that your occupation was less like devilish goose-stepping and more like godly labor?

Your year's course begins with recognizing the parts of speech. They are not meaningless counters, but parts of a vital physiology. Definitions are merely brief statements of uses: a word used as a name, a word whose business is to modify nouns and pronouns, a word that has power to make a statement. Then you take up each in turn. Disregarding such relativities as "cognate object," "object of service," you attend only to real uses—subject, vocative, indirect object, adverbial objective.

In themselves these topics are exactly as inspiring as a heap of bones; but a good physician can see all the way from the power of naming bones to the power of saving lives. Verily so can you, if your eye is not dim. When Thomas learns that *Royal George* is not the object of *down went*, and then for three successive weeks hears that *Barbara Frietchie* is not the object of *sprang*, a wonderful conception begins to grow in Thomas' mind: "I needn't begin every sentence of my own with the subject." Incidentally he will be prepared to adopt such conventions as using commas with vocatives or appositives, and not using them before objective predicates.

Must we hack our way through *all* these constructions? Probably yes—alas! Why? Because unless Thomas is responsible for *every* use, he will not understand you some day when he has written: "The Judge was tall, dark-brown hair." You will point reproachfully at *hair* and ask its construction; he will reply, "I guess that's one you didn't teach us."

Accept any explanation that could possibly be deduced by a rational process. In "It cost a dollar" the noun might be called adverbial. And keep in mind always that the analysis which long habit makes obvious to us is essentially hard. Can you present

offhand an irresistible demonstration of the antipodal functions of the two following verbs: "She seems a goddess," "She resembles a goddess"?

Thence to those words that take the place of nouns. All the parade of "compound," "demonstrative," "indefinite," is a show of phantoms, only to be glanced at. "What do they do?" Just what nouns do—except those relatives. Everything about pronouns is too easy, too vacuous, to spend effort on compared with those relatives. They are weak by nature, small, parasitic, unable to stand alone. They can be graphically charted by writing them in very small letters on a line slanting down from a big antecedent. This is not kindergartening; it is a primal fact about genuine sentences. If a boy establishes the mental habit of drawing a ring about a relative clause, he can always corral his relative constructions; if he has formed no such habit, he will be forever turning loose upon society such mavericks as "I have something here that as long as I keep it I'll be unhappy." Nor have I observed that such a sense of restraint ever stiffened a lively style in the least. Would Stevenson have been more charming if he had allowed his clauses to stampede? You will never waste time by additional exercises in relatives, for no class ever knew them infallibly. It is doubtful whether you should touch upon relatives as descriptive and restrictive. The distinction is the most delicate and difficult in the whole field of rhetoric, the hardest to formulate, the hardest for illiterate minds to grasp. It must be mastered before clauses can be properly pointed, but unless you can present it fully you had better not take it up at all.

As you have had nothing to do with "adjective pronouns," so you will not speak of "pronominal adjectives." We must play no game of now-you-see-it-and-now-you-don't. By their functions ye shall know them—with the exception of possessives. To call these adjectives might help modern-language instructors, but it is doubtful whether we can afford to do so; for it creates the contradiction that possessive nouns are nouns, but that possessive pronouns are adjectives. And consistency is precious in elementary grammar. We must advance consistently to participles. If you realize that they are the goal, and that a knowledge of

them will prevent sentence-errors, you can handle adjectives with zeal.

In adverbs you will find a definition useful. You will feel very little interest in the different kinds of meanings, or in irregular comparisons, or *yes* and *no*, or expletive *there*, or uses of the superlative. You are concerned with "What is it doing?" You will wish you could tear out that leaf that tells about "relative adverbs," for it exposes a child to the plague, abuses and misleads him. They are conjoining words. Interrogative adverbs are adverbs.

The ideal text would alternate lessons in verbs and constructions of nouns, for they are inseparable matters. You must join what the text has sundered. Eight-tenths of your time on verbs will be spent in distinguishing between intransitive and passive, so that nouns will not be improperly called objects; one-tenth on transitive active; one-tenth on such matters as tense and mode. For sequence of tenses in composition will never be influenced by parsings, and subjunctive mode is not defined alike by any two grammarians. A statement or question of fact is indicative, a command is imperative, a mere condition of mind is subjunctive—no more but so. And be willing to leave mode quite untaught until you have made doubly sure of the necessities.

Prepositions—what delight have they ever afforded you? You can find them almost inspiring if you anticipate coherent modifiers and the clearer notions of clauses. A phrase is always a clause to Thomas, and until he can distinguish you have no language by which to explain some matters of arranging, varying, and pointing. It is not that grammar makes good sentences, but that it makes possible the communicating of ideas about forming sentences. So your object is to delimit prepositions from adverbs on the one hand and conjunctions on the other. They always have objects, never modify anything, but form phrases that modify. *Like* is not "an adjective used like a preposition"; it is a preposition. You never weary of inquiring what the object is and what the phrase modifies. And you look into the seeds of time and see an epoch when "in which he sat in" will be monstrous, and when a phrase will not be a sentence.

There is a sense in which all this study is preliminary to conjunctions, for conjunctions mean clauses, and clauses mean the approach—as near as mechanics can go—to decent sentences. Your energy will all be directed at “What does it do?” One form of answer, one invariably, must be insisted on; any other will leave the class in a haze: “It attaches its clause to *one word*.” It may join a modifier or an object, but only when we know to what *one word* and for what purpose can we answer the question “Then what kind is it?” *When* and *where* are no guaranty of what the clause is. How is the clause used? In “Use such powers as you have,” *as* joins a clause to the adjective *such*; therefore the clause is adverbial, no matter what your text declares. It is doubtful whether *as* must ever be called a relative pronoun. There is in your text a section which ought to be excised by a national board of censorship. Some day it will be. It is that paragraph which asserts that certain adverbs are conjunctions. *Still* is not a conjunction. *However* is NOT a conjunction—never, never in a secondary school. Nor is *nevertheless* nor *moreover* nor *then*. If this dictum is a flat denial of the whole platform, then the platform must go to smash. We face an ugly, illogical fact, a social taboo that is superior to all reason. The fact of custom is that we do not point these words with commas as we do *though* and *unless*. We place a deadly entanglement in the path of progress if we so much as whisper the possibility that these independent adverbs might in any event ever conceivably be called conjunctions. No, we must shout the contrary. And as we vociferate we may see opening before us a highway of real sentences on which pupils may safely travel to that Promised Land in which there are no sentence-errors.

A verbal used like an adjective is a participle; a verbal used like a noun is an infinitive. That ought to be the limit of definition, but unfortunately a National Committee asks us to call *-ing* infinitives gerunds. So be it, then. But assure your class that the difference is purely formal, that you are dissecting only adjective uses and noun uses. Never swerve from that. Never use the confusing “participial infinitive” nor “infinitive clause” nor “infinitive

modifiers," nor "complementary" nor "purpose"; spend little time on phrases, tenses, or "pure adjective." Drive at "Is it noun or adjective?" Every infinitive is used like a noun: "complementary" is a direct object; "purpose" and "modifier" are objects of *to*, and *the phrase* modifies. "Every participle must modify something. What is it? Why, then, is it dangling helplessly in your sentence?"

There is the platform—to deal with no mere forms, to ask what words do, to keep before us the vision of better sentences.

A text to put this into effect would have quite a different appearance from our present grammars. Its few simple definitions would be mere titles for colloquial comment on a few principles. The comments would be brief, serving only to introduce the illustrations. And the illustrations would be nothing but introductions to the only part that counts—exercises. Probably nine-tenths of the book would be sentences so grouped as to afford easy preliminary drill on one topic, then on two topics mingled, every exercise including some sentences that contain no illustrations of the topic. This is not a policy of puzzles; it is insurance against heedlessness—a highly important bit of tactics. The sentences would be taken mostly from stories and descriptions, so that they should seem human, somewhat interesting, and so that their meaning should be obvious at first reading. We cannot reckon how unreal we have made grammar with our selections from Tennyson and Emerson (and possibly have done something toward making literature odious). It is more profitable to examine a live idiom like "I don't know who did it" than to whirl toward Azrael's outposts with "As night to stars, woe lustre gives to man."

Does it sound like a program of easy incompleteness? It would be quite the contrary. For it is harder to be thorough in a few fundamentals than to hurry through a thousand nonessentials; more complete to know all of something than to know only a little about some things.

FORWARD MOVEMENTS IN SECONDARY MATHEMATICS

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In the *Bulletin of the American Mathematical Society* for December Professor David Eugene Smith devotes three pages to a review of a textbook bearing the title *First-Year Mathematics for Secondary Schools*. It would hardly be appropriate to attempt to answer a number of the criticisms that are made in this review if the only interest attaching to the review were the interest of the author of a single textbook. The fact that Professor Smith has devoted three pages in this *Bulletin* to the book is perhaps sufficient justification for regarding the review as one of some importance.

The book represents a concrete effort to embody in usable form a method of teaching mathematics which has been frequently discussed and frequently advocated in this country and abroad. Indeed, the book is a second edition of an experiment in combined algebra and geometry which is backed up by the long experience of the University High School of the University of Chicago.

Professor Smith's handling of this book shows that his interest in the volume is not essentially an interest in the particular form of combined mathematics which this book presents, but rather in the general problems of such a course. It will be appropriate, therefore, to comment on the points which he makes in the interest of the general movement for combined mathematics. The author of *First-Year Mathematics* may, therefore, be justified in setting aside the purely personal considerations which attach to his discussion, in his effort to call attention, in terms of those criticisms which Professor Smith presents, to the significance and value of the general movement.

In the first place, Professor Smith begins with a long statement which calls attention to the historical fact that "about six hundred fifty years ago Roger Bacon gave voice to his feelings with respect

to the teaching of mathematics, and this voice was in no respect uncertain nor was it at all lacking in emphasis." Professor Smith's statement goes on further to say that Bacon was in favor of combined mathematics. The reform which has been carried out in *First-Year Mathematics* is, therefore, according to Professor Smith's reasoning, a very ancient reform.

It would be interesting to draw parallel analogies in the history of civilization. I am told by my classical friends that Aristotle and Herodotus both suggested that some day men would probably fly in the air as birds do. I confess that I have none of the historical references which would make it possible to give the particular passages in which these comments are to be found. That flying is an ancient ambition of the human race would, however, seem to be fully proved by these references. The working out of the special mechanism by which flying can be effected has had to wait for the development of a good deal of modern machinery. The realization can probably be distinguished, by most historical students, from the first statement of the ambition.

It would be assuming too much to say that *First-Year Mathematics* is the only answer to Roger Bacon's prophecy. On the other hand, anyone who shuts his eyes to the fact that the movement for a combination of mathematics is vigorous, vital, and distinctly modern in its character is probably buried in historical details rather than watching to discern forward movements that are going on at the present time. Certainly history is interesting. It ought to be added, with equal emphasis perhaps, that recent efforts in Germany, England, and in this country to realize this great ambition of Roger Bacon and many a later mathematician are laudable in spite of the fact that the original discussion began six hundred fifty years ago, and has been blocked by the failure of educational machinery to supply the necessary instruments of the reform. Perhaps in this case, as in the world of mechanics, it is only recently that there have been sufficient flexibility and variety in modern life to carry the strain of an actual experiment in the realization of an ancient prophecy.

While touching on mathematical history, we may refer to a paragraph on the third page of Professor Smith's review. *First-*

Year Mathematics, following a number of other modern textbooks, has attempted to interest the student in the historical development of mathematical sciences and has included biographical sketches, distributed throughout the text, of a number of eminent students of mathematics. Professor Smith is very much grieved to find that in these the spelling of the names does not comport with his large historical information on the subject. The author of *First-Year Mathematics* must frankly admit that he borrowed the spelling of the names, together with most of the facts about these mathematicians, from such writers as Cajori, Ball, and others. Again, he must admit that he is not skilled in the critical study of mathematical history, and he will be very glad indeed to modify the spelling of these names; but he will be a little in doubt, even after the elaborate paragraph in Professor Smith's review, about how to attack the problem of getting the right spelling. If Professors Smith, Cajori, and Ball do not agree, obviously the ordinary student of mathematics must feel serious bewilderment in attempting to decide among them.

It may be well to comment in some detail on another general question which Professor Smith attacks in his review of this book. He says:

Of course the book can be successfully taught; that is true of any book, provided the right teacher is available. But that a book with what seems to be a forced fusion of essentially different branches of a science, based solely upon the theory of ease of presentation, which theory does not seem to have been carried out—that such a book can be generally successful can hardly be expected.

The question which Professor Smith is discussing in this paragraph is one of vital interest to all teachers of mathematics. In his recent book on *The Psychology of High-School Subjects*, Professor Judd has brought together some statistics which seem to indicate that the problem of the teaching of mathematics is very much more involved than Professor Smith's remarks would seem to indicate. It will hardly be appropriate to print the full table which is given on p. 18 of the volume referred to. The failures in mathematics, as recorded, show a very much higher percentage than those in most of the other subjects of the curriculum. Students

are failing in Algebra I and II, in the schools reported, to the extent of 25 to 30 per cent. On the other hand, students are failing in English I and II only to the extent of 16 to 18 per cent. Students are failing in Latin I and II in numbers representing 18 to 25 per cent. In other words, the balance against mathematics, especially algebra, is so heavy as to make it clear that it is not possible for mathematics to hold its position in the secondary schools of this country unless the difficulty of presenting it to students is made a subject of careful study. It is the contention of the author of *First-Year Mathematics* that Algebra I, in the form in which it is ordinarily presented to students, is a badly organized subject. Indeed, *First-Year Mathematics* makes an effort to include a very large amount of geometry in the first-year course in high-school mathematics. That this is a distinct virtue is attested by the experience of the University High School and a number of other institutions that have used the book.

Rather than accept Professor Smith's general pronouncement that any book can be taught by a good teacher, we must admit on the basis of scientific studies that it is extraordinarily difficult, even for good teachers, to keep mathematics in the high school at the same level of success as the other subjects that are taught to students in these schools. That some reform in the teaching of mathematics must be worked out is therefore evident. The reform which is not uncommonly being made in high schools is the elimination of mathematics. Why one should take the position that every book serves the purposes of a good teacher is difficult to understand, when the whole effort of modern educational development is in the direction of a better organization of all the subjects of instruction. One might as well say that any textbook in Latin can be effectively used by a good teacher. The facts are, of course, that the good teacher is the teacher keenest in selecting that textbook which is well organized and well arranged for the needs of his pupils.

In exactly the same way it will hardly be possible very much longer to offer to teachers of mathematics the argument that they can use texts in mathematics of the conventional form, provided they are good teachers. The very fact that they are awake to the problems of instruction in the high schools will lead them to see the

necessity of making such a revision of the course in mathematics that it will be usable for the average student. The whole reform movement in mathematics has grown out of a very profound discontent with the kind of mathematics now taught in the schools. It is not serving its purpose, whether in the form of geometry or of algebra. Geometry is not needed by the ordinary student in the modern high school in the form in which it is now presented. It is very much needed in the form of constructive principles and devices. In the same way much of the algebra has absolutely no relation to anything except the most abstract intellectual life. Many of the sections on factoring, repeated again and again in the conventional textbook on algebra, are utterly without value to the students.

Mathematics can hardly go on in the beaten path which earlier generations have allowed it to take now that the course of study is filled with rich and concrete courses that bear upon life and give the student a stimulating view of the society and industry about him. When one realizes how easily it is possible to extract from algebra and geometry those principles which will be useful to the student, and to lay great stress upon the portions of mathematical science which are really available for intellectual development, it is hard to see why the conventional teacher tries to support the conventional book by saying that the book itself is of really very little value in determining the success of the course.

Stripping the review of Professor Smith of its historical subtleties and its sophistry with regard to instruction, we find a few paragraphs which have to do with the real problem of mathematics. Professor Smith objects violently to several sections in the book which he describes as formal. Fortunately he makes reference explicitly to pages, so that it is possible to know exactly what appeals to him as formal in the book; and one can, by comparative studies of other texts, including those which were written or revised by Professor Smith himself, set up contrasts which throw an interesting light on the general question of formalism in mathematics instruction.

The section on p. 5 to which Mr. Smith objects is the definition of equal segments, unequal segments, and notation for line-

segments. These exercises in the textbook are the results of a careful study of certain simple geometrical forms which are used as the concrete basis out of which the student may develop certain methods of expression. Geometry is used in the earlier pages of the book to establish, so far as possible, a concrete basis for the abstract discussions which begin on p. 5. The method of the book can thus be described by saying that it opens with concrete examples of certain mechanical principles and certain space relations, and gradually brings the student to the point where all of these can be expressed in a compact mathematical formula. The author is willing to accept Professor Smith's description, that p. 5 gives a formal statement of the conclusions of his discussions. All mathematics has the advantage of putting into a compact abstract form concrete relations which are much more complex when one views them in their concrete reality than they are when one expresses them in the abstract way. Formal statements of mathematical principles are certainly necessary in a mathematical discussion, but it does not follow that the treatment has been formal because it issues in a formal system of notation. Formalism in any proper sense of the word means a type of treatment which leaves the student with nothing except the bare husks or outlines of the idea. A lesson is formal when it rushes too soon into the sphere of abstraction. A lesson is unjustifiably formal when it gives the student no content about which he may think.

First-Year Mathematics does not at any point lay claim to an abandonment of the formal side of mathematics, but it does make an effort in every case to lead the student step by step, with great detail of concrete illustration, to an intelligent interpretation of the formal symbols which are employed. As opposed to the method of ordinary books in mathematics, this effort to be concrete is one of the major characteristics of combined mathematics.

The author of *First-Year Mathematics* finds great satisfaction, as he reads the modern books in algebra, in the more liberal use made by other authors of the graph and other geometrical devices for illustrating abstract number relations. That even those who are unwilling to go the whole length of combining the two subjects are thus constantly employing methods that are virtually those

of combined mathematics seems to him to be a clear indication that a further development of this attitude will not be unwholesome for the science itself, and will ultimately free mathematics from that objectionable formalism which he would join Professor Smith in condemning in unqualified terms.

By way of further justification of the method employed in *First-Year Mathematics*, it is legitimate to point out that many authors of textbooks on secondary mathematics assume that the fundamental formal concepts of mathematics are so simple that the average student can understand them, even when they are stated without any concrete illustrations whatsoever. The result is that students begin work in mathematics with vague notions. Years may pass before they understand them clearly, and then this belated understanding is brought about usually by interpreting the abstract statement in terms of some concrete illustration. The author of *First-Year Mathematics* has aimed to provide content wherever the student meets a definition or an axiom for the first time.

A few typical examples will illustrate the difference between the undesirable formal treatment of algebra or geometry and the use of mathematical forms as these are taken up in combined mathematics.

First, we may restate briefly the method used in *First-Year Mathematics* in taking up the axioms:

The teacher draws on the blackboard two pairs of equal line-segments (Fig. 1), as AB and CD , and EF and GH . A student is then asked to draw on the board the sums $AB+EF$ and $CD+GH$. Another student measures these sums and compares them. He finds that they are equal.

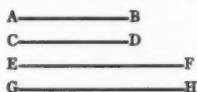


FIG. 1

The problem is then repeated in a somewhat different form: Letting a , b , c , and d be the lengths of four segments such that $a=b$, and $c=d$, show by measuring that $a+c=b+d$. By means of these problems the student is led to state the addition axiom in his own words. He finds in the textbook, on the other hand, a statement of the axiom with which to compare his own: *Equals added to equals give equals.*¹ The second problem makes him familiar,

¹ *First-Year Mathematics*, p. 17.

while he is learning the statement, with the form in which the axiom is usually applied. At the same time he is acquiring valuable training in the ability to measure—so important for all graphical work. The subtraction axiom is approached two pages farther on in a similar manner (p. 19). Discussion of the multiplication axiom is postponed until p. 35; and the division axiom appears on p. 34. No attempt is made to hurry the student over several of the axioms at one time. Clear comprehension, not quantity, is the principal purpose of this beginning work. Each axiom is followed by a variety of problems giving opportunity to apply the new principle.

Presented thus, the study of algebra and geometry may be taken up earlier than is now commonly the case. The writer has a seventh-grade class studying *First-Year Mathematics* and so far has found no difficulty in getting the pupils to do the work satisfactorily. At the end of the first semester these twenty-one children took the same final examination as the regular first-year classes in high school, and their grades compared favorably with those of the high-school students.

Turning to the treatment of the axioms in the *Wentworth-Smith Algebra*, p. 20, we find that not one but six axioms are given at one time. The textbook indicates no connection between these abstract statements and what precedes. It is evidently left to the student or to the good teacher who can use any book to make this connection.

The axioms are stated as follows:

Axioms: A general statement admitted to be true without proof is called an *axiom*. The axioms in the beginning of algebra are six in number.

1. If equals are added to equals, the results are equal.
2. If equals are subtracted from equals, the results are equal.
3. If equals are multiplied by equals, the results are equal.
4. If equals are divided by equals, the results are equal.
5. Like powers, or like roots, of equals are equal.
6. Quantities equal to the same quantity are equal to each other.

Without further explanation, this is followed by problems of this type: "If $2a=16$, what does a equal? What axiom is used?"

Those of us who have worked sympathetically with high-school students have found that, to the average student who has been in the high school a little over a week, an axiom has very little meaning when approached as above. How difficult must it be for him to select and apply the proper axiom to be used in these problems! Sooner or later he will suffer the fatal consequences of the

error of assuming that these things are simple. The later work of the year and of subsequent years will show that as tools for problem-solving these axioms are of little value to the student, because he has neither understood nor applied them.

Of course, the teacher will find that he can get an answer promptly: "If $2a=16$, then $a=8$." But that does not at all indicate that the student has used an axiom to get the result. In all probability his former training in arithmetic helps him to get the answer by inspection. This is very different from using the axiom, when he should reason about as follows:

Given

$$2a=16$$

Dividing both sides of the equation by 2,

$$\frac{2a}{2} = \frac{16}{2}$$

Reducing to its simplest form,

$$a=8$$

If the student learns how to work the example but does not understand what he does, all may go well until he tries to solve an equation like $ax=b$. Unless he is conscious of the fact that he must divide both sides by a , he is as likely to answer $x=b-a$, as $x=\frac{b}{a}$. Once more he is made to go back to the equation $2a=16$.

This time he reasons out with great care why the axiom gives him $a=8$, so that he may be able to pass to the more difficult step $x=\frac{b}{a}$, and, probably for the first time during the course he understands what the division axiom really means.

Many students do not acquire the power to use this axiom in the second or even the third year of the high-school course. A common illustration of this fact is found in assigning problems like the following: "Prove that if a line bisects two sides of a triangle it is parallel to the third side." The suggestion is given that this will be true if it can be shown that the segments of the first two sides are proportional. In symbols, the problem may be stated thus: "Given $a=b$, $c=d$ (Fig. 2); prove that $\frac{a}{c} = \frac{b}{d}$." We see that the desired proportion is obtained by applying the division axiom. Yet, after a year's work in algebra, many students are unable to draw this apparently simple conclusion.

The writer has seen the same difficulty arise even later. In a third-year class a certain problem had been worked up to the point where the following equations were obtained:

$$450 = c(x-4)$$

$$425 = c(y+3)$$

The required unknowns are x and y . The number c is to be eliminated. After some discussion of the method of doing this,

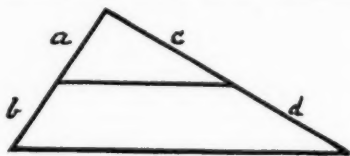


FIG. 2

the class decided to eliminate c by solving each equation for c and then comparing the results. Only one member of that class was able to see that he might eliminate c by using the division axiom.

In the light of much experience would it not be better to remove the vagueness and subsequent uncertainty by making each law clear at the beginning, rather than to assume that the ordinary student can comprehend six of the axioms at once? It is hard to understand why it is that some authors regard many difficult matters of elementary mathematics as simple. For the high-school teacher it is a far safer course to follow the principle "never to underestimate the difficulty of understanding on the part of the pupil" than to dispose too quickly of very important, abstract, and fundamental laws as "simple." Regarding the effort of the author of *First-Year Mathematics* to illustrate some of these so-called simple things in a concrete way, Professor Smith disapprovingly says: "The reader will find the simple made difficult in various cases, as in such products as $(a-b)c$, $(a+b)(a-b)$, $(a-b)(c+d)$, and $(a-b)^2$, and in the law of signs in multiplication as based upon the 'turning tendency' idea." Experience has shown that some of the products mentioned here as well as the law of signs in multiplication appear not at all simple to beginners. One may visit classes in mathematics in almost any high school and be sure to find students who will state that $(a-b)^2$ is equal to a^2-b^2 . Indeed, some students find the correct form, $(a-b)^2 = a^2 - 2ab + b^2$, one of the hardest things in algebra to remember. The difficulty occurs in the first year as well as in the second or third, if not in the fourth. Even college professors of mathematics are heard to

complain that the principle did not receive in the high school the attention which it deserves. Surely no experienced high-school teacher can call this a simple matter. Nor is this difficulty typical of the present high-school generation. From his own high-school days the writer remembers only too well that students had the same trouble in squaring binomials.

If concrete illustrations help some students to remember the correct expansions of such expressions as $a(a+b)$, $(a+b)^2$, $(a-b)^2$, etc., as experience has shown that they do, why should they not be given in a textbook?

Since the law of signs in multiplication is mentioned as one of the simple things of algebra, the reader will be interested in Professor Smith's own treatment of this law with comments interspersed as follows:¹

We cannot pick up a book $2\frac{2}{3}$ times. [Some high-school students will not be willing to admit that.] Nevertheless, we say that $2\frac{2}{3}$ times \$3 equals \$8. [Will the student see the connection between these two statements, and if he does, will that type of reasoning appeal to him as being clear?] That is, we define [This is expecting much of a student who entered high school about three weeks before. If we must take something as a definition, why not take the sign law itself?] what is meant by multiplying by $2\frac{2}{3}$ and then use the word "times" just as we do with integers. Similarly [i.e., we are to assume the statement above to be perfectly clear], we cannot pick up a book -2 times, but we may define what we mean by multiplying by -2 , and then we may use the word "times" as we do with positive numbers. [This will hardly seem simple to a beginner in algebra.] Because $3 \times (-2) = -6$, therefore $(-2) \times 3$ ought to equal -6 . [Notice that the commutative law is used here. In his review Professor Smith objects to the early introduction of this law. Should we then use the principle without stating or naming it? We do not hesitate to use such terms as coefficient, exponent, polynomial, etc. What objection, then, is there to the term "commutative"?] Therefore, we define multiplication by a negative number to mean multiplication by a positive number having the same absolute value, the sign of the product being changed. [Even an adult will find it difficult to follow the author through this kind of reasoning.]

$$\text{Therefore, } 2 \times (-3) = -6$$

$$a(-b) = -ab$$

$$-2 \times 3 = -6$$

$$-a \times b = -ab$$

$$-2 \times (-3) = 6$$

$$-a \times (-b) = ab$$

If two numbers have like signs, their product is positive.

If two numbers have unlike signs, their product is negative.

[This concludes the treatment.]

¹Wentworth-Smith Algebra. Book I, § 32. The remarks in brackets are questions raised by the writer.

Even if a student has succeeded in following the preceding discussion, he will be quite willing to admit that the law itself is the simplest part of it. However, on p. 60 this is made still simpler. Here we find the statement: "Briefly stated, the law of signs in multiplication is as follows: In multiplication two like signs give *plus*; two unlike signs produce *minus*." Unfortunately there is danger that some students continue the process of simplifying the law. They omit the "multiplication," and simply remember that "like signs give plus, unlike signs, minus." During the remainder of their high-school careers, they continue to apply this wherever they meet like signs. For example, they will assert that $(-2) + (-3) = +5$. How are we now to convince them that they are wrong? Will it help them to go a second time through the mental performance described above?

We should recognize, in the first place, that the laws of signs are *not simple* for beginners. For this reason they should not be discussed until the student has had considerable experience in the operations with literal numbers. In *First-Year Mathematics* the law of signs in multiplication is taken up after the student has had a half-year's work in high-school mathematics. Nor is it based on the "turning tendency" idea. It is approached by means of four problems, as follows:

1. Find the product of $(+4)$ by $(+3)$.

Solution: Since $(+3)(+4)$ is the same as $(3)(+4)$, it follows that $(+3)(+4)$ equals $(+4) + (+4) + (+4) = (+12)$. Geometrically this means that to multiply $(+4)$ by $(+3)$ is to lay off $(+4)$ three times in its *own* direction (Fig. 3). Thus, $(+3)(+4) = (+12)$

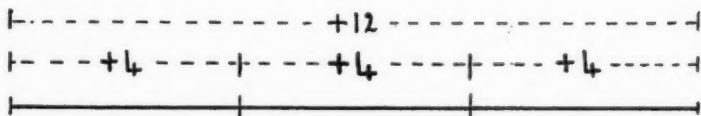


FIG. 3

2. Find the product of (-4) by $(+3)$.

Solution: Since $(+3)(-4)$ is the same as $(3)(-4)$, $(+3)(-4) = (-4) + (-4) + (-4) = (-12)$. Make a drawing for $(+3)(-4)$, i.e., lay off (-4) three times in its *own* direction. Thus, $(+3)(-4) = (-12)$.

3. Find the product of $(+4)$ by (-3) .

Solution: Assuming that the commutative law holds for positive and negative numbers [the student is familiar with this law] it follows that $(-3)(+4) = (+4)(-3) = (-12)$. Notice that the same result is obtained by laying off $(+4)$ three times in the direction *opposite* to its own direction. Make a drawing for this product.

4. Find the product of (-4) by (-3) .

According to problem 3, this means that (-4) is to be laid off three times in the direction opposite to that of (-4) . Thus, $(-3)(-4) = (+12)$.

Then, from a study of the results of problems 1 to 4, the law of signs is deduced.

Having made clear this law by the use of segments, the most concrete material with which the student is familiar, it is illustrated once more, this time with the lever. But this is not the main purpose of the introduction of the lever at this point. Acquaintance with it opens to the student a whole field of problems in which he is greatly interested and which may be solved by means of algebraic equations (see *First-Year Mathematics*, p. 273). Furthermore, it gives him a clear understanding of the directions of turning and of positive and negative angles needed later in the study of geometry and trigonometry. Moreover, to him the lever is as interesting a piece of apparatus as it is simple. It is easy for a teacher of mathematics to secure a lever from the physics department, or if necessary to make the apparatus. What, then, can be the objection to this additional illustration of the law of signs in multiplication? Professor Smith does not object to the use of notions of physics, as is shown by his own method of illustrating the law of signs in addition (see *Wentworth-Smith Algebra*, p. 28). Or are we to assume that this law is more difficult than that of multiplication? Hardly. Then why use notions of physics in one and object to them in the other? In fact, a student can, and many students do, get along altogether without the law of signs in addition. Thus, when adding (-1) to $(+10)$, he may reason as follows: A loss of 1 followed by a gain of 10 is a gain of 9. In a similar way he may settle every question of signs in addition.

Now let us see how successfully Professor Smith uses physics as a means of making concrete the law of signs in addition. He discusses this law as follows:

If we tie to a 10-pound weight a toy balloon that pulls upward 1 pound, what will the two together weigh? [As a problem *following* the discussion of

the sign law this would not be objectionable. But does it serve its purpose as a means of introduction and interpretation? The student will probably wonder how a balloon could be weighed. The idea is new. He has never had occasion to purchase balloons by weight.] From the answer to the question above we find[?] that "to add a positive number to a negative number, take the difference of their absolute values and prefix the sign of the numerically greater number. Similarly, to add a negative number to a negative number take the sum of their absolute values and prefix the negative sign."

Notice that all this is to come out of the *answer* to *one* problem which was most likely given by some bright pupil in the class.

But here we should point to the accompanying picture (Fig. 4). Will this clear up the situation?

The student who has been deprived of natural and illuminating training in geometry will probably see in this picture nothing more than a circle attached to something that looks like a post card. How can that picture give him the necessary ideas as to pull and motion, as in the case of lever and weights? If we could make analyses of what is going on in the minds of all students of an ordinary first-year class when trying to follow the discussion above, all the difficulties just mentioned would appear. The boy never saw a balloon pulling upward a pound. The experiment cannot be performed in the class room, since the teacher is unable to secure a balloon that will pull

upward a pound. Why is the upward direction of this balloon negative when it is usually considered positive? These and other questions will puzzle the student as he is trying to master a law which would be exceedingly simple if line-segments were used, or the gain-and-loss illustration given above.

A systematic comparison of a textbook of the old type with a representative text of the new type would throw considerable light on the great difficulties in high-school mathematics, and would help to explain why more students fail in mathematics than in

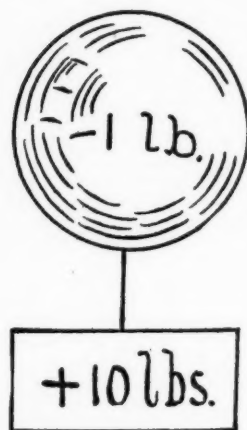


FIG. 4

other subjects. It would also help to answer some questions raised by Professor Smith. "Given the average teacher," he says, "will the student at the end of his work in the high school be as well grounded in mathematics as he would be if the work had been arranged on some other plan?" That depends, of course, entirely on what the other plan is. If by the other plan is meant the old type of method in mathematics, it would be possible to furnish statistics from the University of Chicago High School and from other schools that justify fully the answer yes. "Will he appreciate the subject as well or be as likely to continue his study of its higher branches?" This question may be answered like the preceding one.

Finally he asks: "Does the book (*First-Year Mathematics*) meet the ideals which he [the author] himself has laid down?" The writer feels that he has attempted a solution of a vital and most difficult problem. He thinks that considerable progress has been made in the right direction, but he is far from believing that the task is completed. However, an exceedingly friendly and growing group of teachers is using the book. The author is keeping in close touch with them, is carefully studying their difficulties whenever they arise, and intends to keep on improving the book until his ideals are realized.

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- Coursault, Jesse H., Professor of the History and Philosophy of Education, Cornell University, Ithaca, N.Y.
- Courtis, S. A., Supervisor of Educational Research, Detroit Public Schools, Detroit, Mich.
- Crow, Charles S., Assistant Professor of Education, West Virginia University, Morgantown, W.Va.
- Cubberley, Elwood P., Professor of Education, Leland Stanford Junior University, Stanford University, Cal.
- Davidson, Percy E., Associate Professor of Education, Leland Stanford Junior University, Stanford University, Cal.
- Davis, Calvin O., Associate Professor of Education, University of Michigan, Ann Arbor, Mich.

- Deahl, J. N., Professor of Education, West Virginia University, Morgantown, W.Va.
- Dearborn, Walter F., Assistant Professor of Education, Harvard University, Cambridge, Mass.
- DeBusk, B. W., Professor of Secondary Education, University of Oregon, Eugene, Ore.
- Dewey, John, Professor of Philosophy, Columbia University, New York, N.Y.
- Dick, George S., President, Kearney State Normal School, Kearney, Neb.
- Dorcas, H. C., Professor of Education, University of Iowa, Iowa City, Iowa.
- Doster, James J., Dean, School of Education, Professor of Education, Director of Summer School, University of Alabama, University, Ala.
- Duggan, Stephen Pierce, Professor of Education, College of the City of New York, New York, N.Y.
- Eby, Frederick, Professor of History of Education, University of Texas, Austin, Tex.
- Elliff, J. D., Professor of High-School Administration and High-School Visitor, University of Missouri, Columbia, Mo.
- Elliott, Edward C., Director of the Course for the Training of Teachers, University of Wisconsin, Madison, Wis.
- Ellis, A. Caswell, Professor of Philosophy of Education, University of Texas, Austin, Tex.
- Ellis, Charles Calvert, Professor of Pedagogy and Philosophy, Juniata College, Huntingdon, Pa.
- Erickson, F. M., Professor of Education, University of Idaho, Moscow, Idaho.
- Fant, Anne L., Professor of Education, Mississippi Industrial College, Columbus, Miss.
- Farrington, Frederick Ernest, Associate Professor of Education, Teachers College, Columbia University. Address: Bureau of Education, Washington, D.C.
- Fisk, Herbert F., Professor of Education, Northwestern University, Evanston, Ill.
- Forbes, George M., Professor of Philosophy and Pedagogy, Rochester University, Rochester, N.Y.
- Fordyce, Charles, Dean of Teachers College and Department Educational Theory and Practice, University of Nebraska, Lincoln, Neb.
- Foster, H. H., Professor of Education, University of Arizona, Tucson, Ariz.
- Foster, William T., President of Reed College and Acting Professor of Education, Portland, Ore.
- Freeman, Frank N., Assistant Professor of Educational Psychology, University of Chicago, Chicago, Ill.
- Gambrill, Bessie Lee, Professor of Philosophy and Education, Alfred University, Alfred, N.Y. (On leave of absence for study at Teachers College, Columbia University.)
- Gard, Willis L., Professor of Educational Psychology, Ohio University State Normal College, Athens, Ohio.

- Gore, Willard C., Assistant Professor of Psychology, College of Education, University of Chicago, Chicago, Ill.
- Graves, Frank P., Dean of the School of Education and Professor of the History of Education, University of Pennsylvania, Philadelphia, Pa.
- Gray, C. T., Instructor in the Art of Teaching, University of Texas, Austin, Tex.
- Haggerty, M. E., Professor of Educational Psychology, Indiana University, Bloomington, Ind.
- Hall, John W., Professor of Elementary Education, University of Cincinnati, Cincinnati, Ohio.
- Hall-Quest, Alfred L., Associate Professor of Education, University of Virginia, Charlottesville, Va.
- Hanus, Paul Henry, Professor of Education, Harvard University, Cambridge, Mass.
- Hartson, Louis D., Assistant Professor of Psychology and Education, Grinnell College, Grinnell, Iowa.
- Heck, W. H., Professor of Education, University of Virginia, Charlottesville, Va.
- Heckman, Samuel B., Director, Educational Clinic, Department of Education, College of the City of New York, New York, N.Y.
- Henderson, Ernest N., Professor of Education, Adelphi College, Brooklyn, N.Y.
- Henderson, J. L., Professor of Secondary Education, University of Texas, Austin, Tex.
- Henmon, V. A. C., Professor of Educational Psychology, University of Wisconsin, Madison, Wis.
- Henry, D. W., Assistant Professor of Education and Psychology, University of Toledo, Toledo, Ohio.
- Hill, A. Ross, President and Professor of Educational Psychology, University of Missouri, Columbia, Mo.
- Hitchcock, Clara M., Department of Education, Lake Erie College, Plainessville, Ohio.
- Holley, C. E., Associate Professor of Education, Ohio Wesleyan University, Delaware, Ohio.
- Hollister, Horace A., High-School Visitor, University of Illinois, Urbana, Ill.
- Holmes, Henry W., Assistant Professor of Education, Harvard University, Cambridge, Mass.
- Holton, Edwin L., Professor of Education, Kansas State Agricultural College, Manhattan, Kan.
- Horn, Ernest, Assistant Professor of Education, University of Iowa, Iowa City, Iowa.
- Horne, Herman Harrell, Professor of the History of Education, New York University, New York, N.Y.
- Hughes, Percy, Professor of Philosophy and Education, Lehigh University, South Bethlehem, Pa.

- Inglis, Alexander, Assistant Professor of Education, Harvard University, Cambridge, Mass.
- Jackson, George L., Assistant Professor of Education, University of Michigan, Ann Arbor, Mich.
- Jacobs, Walter Ballou, Professor of Education, Brown University, Providence, R.I.
- James, George F., Dean, College of Education, University of Minnesota, Minneapolis, Minn.
- Jessup, W. A., Dean of the College of Education, State University of Iowa, Iowa City, Iowa.
- Johnson, George E., Division of Education, Harvard University, Cambridge, Mass.
- Johnston, Charles Hughes, Professor of Secondary Education, University of Illinois, Urbana, Ill.
- Jones, Arthur J., Department of Education, University of Pennsylvania, Philadelphia, Pa.
- Jones, Elmer E., Head of Department of Education, Northwestern University, Evanston, Ill.
- Josselyn, W. H., Associate Professor of School Administration, University of Kansas, Lawrence, Kan.
- Judd, Charles H., Director, School of Education, University of Chicago, Chicago, Ill.
- Judd, Zebulon, Professor of Education, Alabama Polytechnic Institute, Auburn, Ala.
- Kandel, I. L., Department of Education, Teachers College, Columbia University, New York, N.Y.
- Kelly, F. J., Dean of the College of Education, University of Kansas, Lawrence, Kan.
- Kemp, W. W., Professor of School Administration, University of California, Berkeley, Cal.
- Kennedy, Joseph, Dean of the School of Education, University of North Dakota, Grand Forks, N.D.
- Kent, Harry L., Associate Professor of Agricultural Education and Principal of School of Agriculture, State Agricultural College, Manhattan, Kan.
- Kiernan, James M., Professor of Education, Hunter College of the City of New York, Park Ave. and Sixty-eighth St., New York, N.Y.
- Kilpatrick, William Heard, Associate Professor of Education, Teachers College, Columbia University, New York, N.Y.
- King, Irving, Assistant Professor of Education, State University of Iowa, Iowa City, Iowa.
- Kirby, Thomas J., Professor of Elementary Education, University of Pittsburgh, Pittsburgh, Pa.
- Klapper, Paul, Associate Professor of Education, College of the City of New York, One Hundred and Thirty-ninth St. and Convent Ave., New York, N.Y.

- Knight, G. W., Dean, College of Education, Ohio State University, Columbia, Ohio.
- Kruse, Paul J., Instructor in Education, University of Washington, Seattle, Wash.
- Ladd, A. J., Professor of Education, University of North Dakota, Grand Forks, N.D.
- Landsittel, F. C., Department of Education, Ohio University, Athens, Ohio.
- Lee, W. H., Professor of Education, Albany College, Albany, Ore.
- Lewis, E. E., Associate Professor of Education, University of Iowa, Iowa City, Iowa.
- Lough, James E., Professor of Educational Psychology and Methods, New York University, New York, N.Y.
- Luckey, G. W. A., Dean and Professor of Education, University of Nebraska, Lincoln, Neb.
- Lyons, Cecil K., Instructor in History of Education, University of Pittsburgh, Pittsburgh, Pa.
- McAllister, Cloyd N., Professor of Education, Berea College, Berea, Ky.
- McConaughy, James L., Professor of Education, Dartmouth College, Hanover, N.H.
- McKeag, Anna Jane, Professor of the History and Principles of Education, Wellesley College, Wellesley, Mass.
- McLeod, Harvey, Professor of Educational Psychology, Howard University, Washington, D.C.
- McMurray, Frank Morton, Professor of Elementary Education, Teachers College, Columbia University, New York, N.Y.
- MacLear, Martha, Assistant Professor of Education, Howard University, Washington, D.C.
- Macpherson, W. E., Professor of Education, Queen's University, Kingston, Ontario, Canada.
- MacVannel, J. A., Professor of Philosophy of Education, Teachers College, Columbia University, New York, N.Y.
- Mead, A. R., Associate Professor of Education, Ohio Wesleyan University, Delaware, Ohio.
- Meriam, J. L., Professor of School Supervision, University of Missouri, Columbia, Mo.
- Miller, A. J., Department of Education, Kent State Normal School, Kent, Ohio.
- Miller, Edward A., Professor of Education, Oberlin College, Oberlin, Ohio.
- Miller, Harry L., Assistant Professor of Education, University of Wisconsin, Madison, Wis.
- Miller, Irving E., Assistant Professor of Philosophy and Education, University of Rochester, Rochester, N.Y.
- Minnich, Harvey C., Dean of Ohio State Normal College of Miami University, Oxford, Ohio.

- Monroe, Paul, Professor of the History of Education, Teachers College, Columbia University, New York, N.Y.
- Nichols, Claude Andrew, Professor of Education, Southwestern University, Georgetown, Tex.
- Noe, J. T. C., Head of Department of Education, State University, Lexington, Ky.
- Norsworthy, Naomi, Associate Professor of Educational Psychology, Teachers College, Columbia University, New York, N.Y.
- Norton, Arthur O., Professor of Education, Wellesley College, Wellesley, Mass.
- Olin, Arvin, Professor of Education, University of Kansas, Lawrence, Kan.
- Omwake, George L., President and Professor of Education, Ursinus College, Collegeville, Pa.
- O'Shea, M. V., Professor of Education, University of Wisconsin, Madison, Wis.
- Pakenham, William, Dean, Faculty of Education, University of Toronto, Toronto, Canada.
- Parker, Samuel Chester, Professor of Educational Methods, University of Chicago, Chicago, Ill.
- Payne, Bruce R., President, George Peabody College for Teachers, Nashville, Tenn.
- Pearce, D. W., Associate Professor of Education, University of Maine, Orono, Me.
- Phelan, W. W., Director of the School of Education, University of Oklahoma, Norman, Okla.
- Proctor, William, Professor of Education, Pacific University, Forest Grove, Ore.
- Radosavljevich, Paul R., Assistant Professor of Experimental Pedagogy, New York University, New York, N.Y.
- Rall, E. E., Professor of Education, University of Tennessee, Knoxville, Tenn.
- Rapeer, Louis W., Professor of Education, Pennsylvania State College, State College, Pa.
- Reisner, Edward H., Associate Professor of Education, Kansas State Agricultural College, Manhattan, Kan.
- Ressler, E. D., Professor of Industrial Education, Oregon Agricultural College, Corvallis, Ore.
- Rhoads, McHenry, Professor of Secondary Education, State University, Lexington, Ky.
- Rhoton, A. L., Professor of Education, Georgetown College, Georgetown, Ky.
- Richardson, R. F., Professor of Education, Pacific University, Forest Grove, Ore.
- Roberts, George Lucas, Head of Department of Education, Purdue University, Lafayette, Ind.
- Robertson, C. B., Director of University Extension and Professor of Secondary Education, University of Pittsburgh, Pittsburgh, Pa.

- Robinson, G. Carleton, Assistant Professor of Education, State College of Washington, Pullman, Wash.
- Rogers, Lester B., Professor of Education, Lawrence College, Appleton, Wis.
- Rouse, John E., Professor of Education, James Millikin University, Decatur, Ill.
- Ruediger, W. C., Professor of Educational Psychology, Dean of Teachers College, Director of Summer School, George Washington University, Washington, D.C.
- Russell, James E., Dean, Teachers College, Columbia University, New York, N.Y.
- Russell, William F., Professor of Secondary Education, George Peabody College for Teachers, Nashville, Tenn.
- Sachs, Julius, Professor of Secondary Education, Teachers College, Columbia University, New York, N.Y.
- Sargent, Walter, Professor of Aesthetic and Industrial Education, University of Chicago, Chicago, Ill.
- Schmidt, C. C., Professor of Education, University of North Dakota, Grand Forks, N.D.
- Schmidt, W. A., Professor of Educational Administration, University of Oklahoma, Norman, Okla.
- Sealock, W. E., Associate Professor of Education, Iowa State College, Ames, Iowa.
- Sears, J. B., Assistant Professor of Education, Leland Stanford Junior University, Stanford University, Cal.
- Selvidge, R. W., Professor of Manual Arts, George Peabody College for Teachers, Nashville, Tenn.
- Sheldon, H. D., Dean of Education, University of Oregon, Eugene, Ore.
- Sies, Raymond W., Professor of Educational Administration, University of Pittsburgh, Pittsburgh, Pa.
- Simmers, C. L., Professor of Education, New Hampshire College, Durham, N.H.
- Smith, Henry L., Professor of School Administration, Indiana University, Bloomington, Ind.
- Smith, Mary Shannon, Professor of Education, Meredith College, Raleigh, N.C.
- Stetson, Fred L., Assistant Professor of Education, University of Oregon, Eugene, Ore.
- Stevens, Romiett, Assistant Professor of Secondary Education, Teachers College, Columbia University, New York, N.Y.
- Stewart, Rolland M., Assistant Professor, College of Education, State University of Iowa, Iowa City, Iowa.
- Storm, A. V., Professor of Agricultural Education, University of Minnesota, Minneapolis, Minn.
- Stout, John E., Professor of Education, Cornell College, Mount Vernon, Iowa.

- Stowe, A. Monroe, President, Professor of Education, Toledo University, Toledo, Ohio.
- Strayer, G. D., Professor of Educational Administration, Teachers College, Columbia University, New York, N.Y.
- Street, Jacob R., Dean, Teachers College, Syracuse University, Syracuse, N.Y.
- Strong, Mrs. Anne Gilchrist, Department of Education, University of Cincinnati, Cincinnati, Ohio.
- Suhrie, Ambrose L., Assistant Professor of Elementary and Rural Education, School of Education, University of Pennsylvania, Philadelphia, Pa.
- Sutton, William Seneca, Dean of the Department of Education, Professor of Educational Administration, University of Texas, Austin, Tex.
- Suzzallo, Henry, President, University of Washington, Seattle, Wash.
- Swift, Edgar James, Professor of Psychology and Education, Washington University, St. Louis, Mo.
- Swift, Fletcher H., Professor of Education, University of Minnesota, Minneapolis, Minn.
- Terman, Lewis M., Associate Professor of Education, Leland Stanford Junior University, Stanford University, Cal.
- Thackston, John A., Dean, Teachers College, University of Florida, Gainesville, Fla.
- Thomas, James S., Professor of Secondary Education, University of Alabama, University, Ala.
- Thomas, W. Scott, Assistant Professor of Education, University of California, Berkeley, Cal.
- Thompson, Frank E., Director, College of Education, University of Colorado, Boulder, Colo.
- Thorndike, Edward L., Professor of Educational Psychology, Teachers College, Columbia University, New York, N.Y.
- Townsley, Fred D., Associate Professor of Education, James Millikin University, Decatur, Ill.
- Trabue, M. R., Instructor in Educational Administration, Teachers College, Columbia University, New York, N.Y.
- Trettien, A. W., Professor of Psychology and Secondary Education, Toledo University, Toledo, Ohio.
- Truesdell, Benjamin W., Professor of Education, Friends University, Wichita, Kan.
- Tufts, James H., Professor of Philosophy, University of Chicago, Chicago, Ill.
- Updegraff, Harlan, Professor of Educational Administration, University of Pennsylvania, Philadelphia, Pa.
- Wallin, J. E., Director of Psycho-educational Clinic, St. Louis Public Schools; Lecturer in Extension Department, Harris Teachers College, St. Louis, Mo.
- Wardlaw, Patterson, Professor of Pedagogy, University of South Carolina, Columbia, S.C.

- Weeks, Arland D., Professor of Education, North Dakota Agricultural College, Agricultural College, N.D.
- West, Henry S., Professor of Secondary Education and Director of School Affiliation, College for Teachers, University of Cincinnati, Cincinnati, Ohio.
- Whitney, A. S., Professor of Education, University of Michigan, Ann Arbor, Mich.
- Williams, Charles Hamilton, Director of Extension Work, University of Missouri, Columbia, Mo.
- Williams, Henry G., Dean of the State Normal College, Ohio University, Athens, Ohio.
- Williams, L. A., Professor of School Administration, School of Education, University of North Carolina, Chapel Hill, N.C.
- Wilson, G. M., Professor of Agricultural Education, Iowa State College, Ames, Iowa.
- Withers, John W., Principal, Harris Teachers College, St. Louis, Mo.
- Woolter, T. J., Dean, School of Education, University of Georgia, Athens, Ga.
- Works, George A., Professor of Rural Education, Cornell University, Ithaca, N.Y.
- Yocum, A. Duncan, Professor of Pedagogy, University of Pennsylvania, Philadelphia, Pa.

LIST OF NEW MEMBERS

- Alexander, Tom, Associate Professor of Elementary Education, George Peabody College for Teachers, Nashville, Tenn.
- Birch, T. Bruce, Professor of Psychology and Education, Wittenberg College, Springfield, Ohio.
- Briggs, Thomas H., Associate Professor of Education, Teachers College, Columbia University, New York City.
- Cameron, Edward Herbert, Assistant Professor of Education, Yale University, New Haven, Conn.
- Cope, Alfred B., Professor of Education, Missouri Wesleyan College, Cameron, Mo.
- Day, Abbie Louise, Instructor in Elementary Education, University of Cincinnati, Cincinnati, Ohio.
- Dunham, James H., Dean of College of Liberal Arts and Science, Professor of Philosophy and Psychology, Temple University, Philadelphia, Pa.
- Good, Harry G., Professor of Education, Bluffton College, Bluffton, Ohio.
- Gray, William S., Instructor in Education, School of Education, University of Chicago, Chicago, Ill.
- Jewell, James Ralph, Dean of School of Education, University of Arkansas, Fayetteville, Ark.
- Jones, George Ellis, Assistant Professor of Education, School of Education, University of Pittsburgh, Pittsburgh, Pa.

- McMurry, C. A., Professor of Elementary Education, George Peabody College for Teachers, Nashville, Tenn.
- Mead, Cyrus D. W., Assistant Professor of Elementary Education, University of Cincinnati, Cincinnati, Ohio.
- Myers, W. A., Instructor in School Administration, Indiana University, Bloomington, Ind.
- Pittenger, Benjamin F., Lecturer in Education, University of Illinois, Urbana, Ill.
- Rugg, H. O., Instructor in Education, School of Education, University of Chicago, Chicago, Ill.
- Shoninger, Yetta S., Assistant Professor of Elementary Education, George Peabody College for Teachers, Nashville, Tenn.
- Shott, John A., Professor of Education, Westminster College, New Wilmington, Pa.
- Smith, Miss Meredith, University of Pittsburgh, Pittsburgh, Pa.
- Strong, Edward K., Jr., Professor of Psychology and the Psychology of Education, George Peabody College for Teachers, Nashville, Tenn.
- Twiss, George R., High School Inspector and Professor of Principles and Practice, Ohio State University, Columbus, Ohio.
- Waite, Mary G., Assistant Professor of Childhood Education, University of Pittsburgh, Pittsburgh, Pa.
- Williams, E. I. F., Instructor in Education, Heidelberg University, Tiffin, Ohio.
- Wresslar, F. B., Professor of Education, George Peabody College for Teachers, Nashville, Tenn.

MINUTES OF THE MEETING OF FEBRUARY 21 AND 22, 1916,
AT DETROIT

COMMITTEES APPOINTED BY DR. JUDD

Nominating Committee: Frank P. Graves, W. W. Phelan, Charles Fordyce.

Auditing Committee: F. J. Kelly, V. A. C. Henmon.

The program as printed in the Superintendence section, National Education Association, was carried out, luncheons included. The Monday forenoon meeting was well attended, about 150 being present. At the afternoon meeting there were at least 250 present, possibly more. The attendance at the Tuesday morning session was slightly less, from 125 to 150, owing to the fact that a number of the men were drafted off for other work.

The general plan of the program was unusually satisfactory. At the noon luncheon on Monday, 27 states were represented, 90

members being in attendance at the luncheon. At the business meetings, the following matters were disposed of:

There was a brief report of progress by each of the standing committees. The matter of their continuance was referred to the Executive Committee with power to act.

Dean Russell moved that the Executive Committee be invited to consider the advisability of unifying the committee work through a central committee having power to detail lines of investigation. The motion prevailed.

The recommendation of the Executive Committee that a committee of ten be appointed to redraft the constitution and to determine more definitely the policy of the Society was passed unanimously.

Professor Sutton offered the following resolution:

Resolved, That a Committee of five be appointed by the chair to report at the next annual meeting of the Society of College Teachers of Education upon the significance of professional education for teachers as conducted in American colleges and universities; that a copy of the report be sent to each member of the Society in advance of the meeting in 1917; and that said report be discussed at that meeting with a view to its adoption, amendment, or rejection, as the society may elect.

The motion was referred to the Executive Committee with power to act.

The report of the treasurer showing receipts to the amount of \$260.08 and an expenditure of \$73.41, leaving a balance of \$186.67, and the report of the Auditing Committee approving the treasurer's report were submitted and approved.

Professor Graves, chairman of the Nominating Committee, reported as follows: *President*, Dean W. G. Chambers, University of Pittsburgh; *Secretary-Treasurer*, G. M. Wilson, Iowa State College; *Member of the Executive Committee* (replacing Professor Thompson), Dean R. J. Kelly, University of Pittsburgh. The committee's report was accepted, and the nominees declared elected.

The arrangement of the Executive Committee for a representative of the Society of College Teachers of Education at the Hanus honorary banquet, March 11, was approved by the Society.

The situation with reference to discontinuance of the contract with the *School Review* and the collection of the fee of \$1.00 only

this year was explained to the Society by the presiding officer, Dr. Judd, and on motion the action of the Executive Committee was approved.

It was moved and seconded that the material on practice teaching presented by Professor Mead and Dr. Stevens be recommended to the consideration of the Executive Committee for possible publication.

It was moved that it is the sense of the Society that a monograph be published in advance of the meeting and that the Executive Committee be so advised. Passed unanimously.

MINUTES OF THE EXECUTIVE COMMITTEE MEETINGS

The recommendation of the Executive Committee with reference to the appointment of a committee to redraft the constitution to determine the policy of the Society is noted above in the minutes of the Society.

Dr. Judd announced the appointment of the following committees:

CONSTITUTIONAL COMMITTEE

E. E. Rall, University of Tennessee, *Chairman*
W. G. Chambers, University of Pittsburgh
F. J. Kelly, University of Kansas
James E. Russell, Columbia University
W. A. Jessup, University of Iowa
G. M. Wilson, Iowa State College
Charles H. Judd, University of Chicago
W. W. Charters, University of Missouri
Carter Alexander, George Peabody College for Teachers
Frank E. Thompson, University of Colorado

COMMITTEE ON INQUIRY AND UNIFICATION OF WORK

W. G. Chambers, University of Pittsburgh, *Chairman*
G. M. Wilson, Iowa State College
Paul Monroe, Columbia University
W. G. Bagley, University of Illinois
Charles H. Judd, University of Chicago

EDUCATIONAL NEWS AND EDITORIAL COMMENT

MILITARY DRILLS IN THE SCHOOLS

The *School Review* in an earlier number pointed out that a mild form of military drill might have certain advantages in the schools. It might, for example, inculcate a spirit of obedience, of subservience to discipline; and it might be an entering wedge in a campaign to force upon the country a realization of the advantages of systematic physical education, as contrasted with excessive training for a few athletes. Such drill should be very simple, resembling in character the activities of the Boy Scouts but planned on a more comprehensive scale. It is, of course, apparent that any form of military science as such cannot be made compulsory in the schools.

Advocates of physical education have seized upon the timeliness of discussions concerning military drill to call attention to the superiority of their programs. We present, almost in full, an illuminating letter to the editor from an officer of the Sargent's School of Physical Education.

To the Editors of the "School Review":

There can be no question that obedience is a very essential quality to the efficient conduct of affairs, both in war and peace. Further, there is no better way to inculcate this quality than by marching and by various group evolutions. But why confine these evolutions to the limited movements of the drill manual *Marching Tactics*? Highly organized games and group contests, as conducted by all adequately trained physical instructors, in which the responsibility of the individual to the whole is given maximum emphasis, are fully as capable, and actually far better adapted to the cultivation of a sense of fair play, responsibility, and obedience than the restricted movements of military drill.

Again, much is said about the desirability of good carriage, and it is looked upon by many as the natural result of military drill. In the first place, good carriage of itself does not necessarily argue physical fitness—good development, vigor, or endurance—but may be merely the empty shell devoid of substance. This is a misconception unfortunately held by many people. In reality, while good carriage is eminently desirable, its attainment alone without the other far more fundamental physical attributes is the merest deception and an absolutely inadequate test of the system of education which brought it about. The facts are that military drill itself not only does not tend to produce good carriage, but that it actually has the opposite effect, and the more so the

younger the boys. The gun is not designed for use as a means of exercise, and is too heavy and too unsymmetrical an instrument to be efficiently used for that purpose. As used in the Butt's drill, it is a very inferior substitute for the wand. . . .

Physical education in the public schools seems to be held to blame for apparently inadequate results of what is, to say the least, not even a semblance of a fair trial. How can a physical-training teacher, however excellent, expect to produce results with two half-hours a week, even if the facilities comprised adequate room and equipment including dressing-room and shower-baths? The miracle is that good results are sufficiently pronounced to be noticeable at all! Again, physical education in the high schools is frequently in the hands of some teacher without adequate training or suitable personality, one who has merely "picked it up" or has played in his football or baseball team or was "good at athletics"; or, still more usual, the only available funds are used to pay a "trainer" to coach a handful of boys in football, and, if there is any left over, some woman to coach a few girls in basket-ball, it being considered far more important that the school should win at basket-ball or football than that the majority of the students should receive any adequate physical training at all!

The proposal is made that military drill together with Boy Scout activities is better than the highly specialized athletic training of the few while the many have nothing. In this we heartily agree. But excellent as are the Boy Scout activities in many respects, they cannot replace adequate physical education either as a constructive or as a corrective agent; they are rather an admirable adjunct to systematic and supervised physical training, best entirely replacing military drill.

Adequate physical education in the high schools would be not merely valuable to the individual as physical exercise and valuable to the nation only as it inculcated obedience, but it would build up a fundamental asset to the nation in the shape of healthy, vigorous, and enduring young men and women, quickened mentally and with well-developed moral courage and patriotism.

Yours very truly,

L. W. SARGENT

With the general tenor of this communication the *School Review* is in hearty accord. No mere marching and countermarching can compare in ultimate effectiveness with systematic physical education. No effort ought to be spared to increase the dignity of the office of the physical director and to place the direction of organized play for both boys and girls in capable hands.

Granted all this, the fact still remains that boys do not have strong propensities for wand exercises; that a sense of obedience and responsibility is very remotely associated with games of pushball; that, even

if these group exercises could be given more generally than two hours a week, and could be conducted by capable leaders, they still would lack an indispensable requisite—they cannot be motivated as the Boy Scout movement is motivated; and any training in games is futile, if the participants are not given some more solid opposition to overcome than the other team. There must be a sense of pride in the group achievement. Uniforms, camps, scouting, and the like possess possibilities of motivation far more valuable for citizenship than a game of pushball.

What does American citizenship mean? We are wilfully blind if we do not teach among other things that it means a manly readiness to participate, if need be, in the defense of the nation. Equally blind to its duties is any educational agency if it fails, at the very least, to give young Americans a chance to express this feeling in a boyish way. While the *School Review* does not believe in compulsory courses in military tactics, while it recognizes the immense superiority of physical culture in many ways, it nevertheless insists that voluntary military companies, adequately equipped and officered, might wisely be organized in the high school. The sight of competing companies from representative schools in the gymnasium, or on the athletic field of any university, would be far more suitable for the present day than interscholastic basket-ball or track meets. If we want our boys to think in terms of what patriotism means in the present crisis, let us at least offer them some means of suitable expression for those ideas.

GOOD CARRIAGE

The second paragraph of Mr. Sargent's communication insists that good carriage may be but an empty shell, devoid of substance. His statement is undoubtedly correct, but it is too often equally true of the results of many other school exercises. Empty shells, mere superficial appearances, are too frequently the outcome of inadequately conducted courses in literature, in science, in moral training. Empty shells in any line are ultimately disastrous, whether upon a battle line in Flanders or in the deceptively squared shoulders of the high-school boy with no underlying physical stamina beneath them.

In this connection it is appropriate to call attention to the American Posture League, incorporated, of 30 Church Street, New York. Under the presidency of Jesse E. Bancroft, this League is sponsored by an imposing array of the nation's leading physicians and educators.

The League announces its purpose as follows:

Realizing that correct posture or carriage of the body is of fundamental importance for health and efficiency, a pronounced element of beauty, and an expression of energy and intelligence, the American Posture League was formed to do scientific and educational work on this subject, and to standardize and improve the conditions affecting it.

On its organization in the fall of 1913 the Posture League took its place in official recognition with the public health organizations of the country, for the performance of a constructive, scientific work not duplicated by any other society.

The League is peculiarly fitted to carry on the work undertaken, as its membership includes orthopedic surgeons and other medical practitioners, physical trainers, school hygienists, and educators who have long specialized on this subject of posture.

These purposes the League endeavors to carry out by removing the faulty school conditions from which are developed round shoulders, narrow chests, and curved spines. The League turns its attention no less to industrial and home conditions; to faulty constructions in public vehicles and audience rooms. Personal hygiene is also a subject of the League's interests, since it promulgates right habits of dress.

The officers and directors of this League aim to produce no empty shells. They are going about their work and removing the causes which are tending to make us a round-shouldered and narrow-chested race. The League does not neglect positive instruction and drill in correct posture and carriage. It doubtless realizes that a careless or ignorant or unsupervised boy may slouch into bad physical habits however scientifically correct his seat in school may be. It is quite likely that the Posture League also realizes that pride in personal appearance, in head held erect on vigorous shoulders, may inspire many a child to develop the physical stamina necessary to acquire the proper filling for the empty shell.

POSSIBILITY OF MILITARY TRAINING IN CHICAGO

Since the statement above was written, a complete military organization in the third and fourth years of the high schools of Chicago has been recommended to the Board of Education by the subcommittee. Following is the report of the committee, signed by Benjamin Buch, principal of the Nicholas Senn High School:

We recommend that in the first and second years of the high school the work in physical instruction be modified so as to conform to the regulations

adopted by the United States army in respect to facings, alignments, marching, setting-up exercises, etc.

That in the Junior and Senior years:

First, a complete military organization be effected; squad, platoon battalion, and regiment.

Second, drills and exercises be carried on in accordance with the United States drill regulations and physical exercise manual.

Third, military sports, athletics, competitive activities, fencing, etc., be practiced for the purpose of developing a better carriage, stronger qualities of leadership, and a more effective citizenship.

President Loeb of the board is said to favor the program, urging that it be placed in charge of an experienced army officer. At the present moment there is no further indication as to what the attitude of the board will be.

MEETING OF THE RELIGIOUS EDUCATION ASSOCIATION

"Religious Instruction and Public Education" was the subject of discussion at the conference of the Religious Education Association held in Chicago February 28 to March 1. Preparatory studies had been made of the various experiments in different parts of the country to correlate these interests. The conference undertook to consider four problems: (1) Is such correlation desirable? (2) What should be the curriculum of religious instruction? (3) How can week-day religious instruction be organized? (4) Where may teachers be obtained?

It was recognized that religious instruction and training are the responsibility of the home and of the church, and not of the public school. At the same time, religious education is the right of every child; and it is thoroughly appropriate for parents and school authorities to reach such agreement as may make it possible for the children to attend schools of religion at proper times of the day. This should be an agreement between the citizens and their public-school officials, and not between the school and the church. The church as an institution ought not to interfere. Whether the public school acts wisely in accrediting Bible-study done in churches under satisfactory conditions, or in setting examinations in biblical literature and history for the purpose of according credit, is an interesting problem in regard to which there is still much difference of opinion.

The conference developed the fact that there is a great deal to be done among Protestants in working out a curriculum of religious instruction. The Roman Catholics know very clearly what program they desire to follow. The Jews have almost as definite a conception of their

educational task. It is noteworthy that the study of the Hebrew language holds a very prominent place with the latter, indicating how inextricable are the religious and racial interests. This also is manifest to some extent among the German Lutherans. But the other Protestant churches are by no means agreed on the subject of curriculum. The graded lessons of the International Sunday School Association are offered for week-day religious instruction, but the inadequacy of these is apparent. Evidently, if the church is to undertake any such large program of education as the new opportunities suggest, there will be need of a serious effort to secure suitable textbooks. As a matter of fact, there is no general agreement as to what a scheme of week-day religious instruction should include. Some desire to make it predominantly an intellectual study of the Bible. Others are more concerned with preparing the children for church membership, partly by a study of the meaning of the church, and partly by the development of religious experience. Still others would wish to put the emphasis upon the cultivation of religious attitudes through various socializing activities. These different points of view constitute a serious difficulty in the development of co-operative endeavor among Protestant bodies. Yet it would seem that only by co-operation will it be possible to carry on week-day religious education in a scientific way. This leads to a consideration of the question of teachers. The church is not at present competent to do any large educational work, because of the lack of trained teachers. Shall the matter be put upon a professional basis, and a limited number of salaried teachers be employed? Shall the church colleges undertake to give a very much larger religious education so that its graduates may be competent as volunteers to be teachers of religion? Shall a professional leadership be secured under which a body of trained volunteers may serve? These questions were seriously discussed, but in the nature of the case no conclusion could be reached.

The conference formulated its conclusions in the following declaration of principles:

DECLARATION OF PRINCIPLES

"RELIGIOUS INSTRUCTION AND PUBLIC EDUCATION"

The movement for correlating religious instruction with public education is one evidence of the awakening of the American people to the right of the child to his religious heritage. The Thirteenth Annual Convention of the R.E.A. has made a distinct contribution to this movement. The practices and results of the diverse experiments in this field were made the subject of preliminary investigations. These investigations were summarized in advance

and made available in print. The legal status of religious instruction in connection with public schools in this country was made clear. Both by the preliminary studies and by the papers and discussions at the meetings, the policies and attitudes of Jews, Catholics, and Protestants have been given full and free expression in regard to fundamental principles, present practices and plans, and unsolved problems. The possibility of frank and friendly co-operation among all persons whose primary interest is in the welfare of children and the promotion of the Kingdom of God has been once more demonstrated, and their substantial agreement on certain principles concerning the relation of religious instruction to public education has been revealed. These principles may be formulated as follows and may be regarded as the declaration of the R.E.A. on the subject of the convention:

1. The church and state are to be regarded as distinct institutions, which, as far as possible, co-operate through the agency of their common constituents in their capacity as individual citizens.

2. All children are entitled to an organic program of education, which shall include adequate facilities, not only for general but for religious instruction and training.

3. Such a division of the child's time as will allow opportunity and strength for religious education should be reached by consultation between parents and public-school authorities without formal agreement between the state and the churches as institutions.

4. The work of religious instruction and training should be done by such institutions as the home, the church, and the private school, and not by the public school nor in official connection with the public school.

5. The work of religious education must depend for dignity, interest, and stimulus upon the recognition of its worth, not merely by public-school authorities, but by the people themselves as represented in the homes, the churches, private schools and colleges, and industries.

6. The success of a program of religious education depends—

- a) Upon the adoption of a schedule which shall include the systematic use of week days as well as Sundays for religious instruction and training.

- b) Upon more adequate provision for training in the experience of public and private worship, and for the use of worship as an educational force.

- c) Upon the degree to which the materials and methods employed express both sound educational theory and the ideals of the religious community in a systematic plan for instruction and training, which shall include *all* the educational work of the local church, whether such church works independently or in co-operation with other churches.

- d) Upon the degree to which professional standards and a comprehensive plan are made the basis of the preparation of teachers for work in religious education.

- e) Upon the degree to which parents awake to the unparalleled opportunity for the religious education of our children and youth, the profound

need for sympathetic co-operation among all citizens of whatever faith, and the call for sacrifice in time and thought, in effort and money, consecrated to the children of the Kingdom.

f) Upon the degree to which the churches awake to their responsibility for the instruction and training of the world's children in the religious life, and take up with intelligence and devotion their common task.

THEODORE G. SOARES

THE TWENTY-EIGHTH EDUCATIONAL CONFERENCE OF THE ACADEMIES
AND HIGH SCHOOLS

On Friday and Saturday, April 14 and 15, will be held the Annual Conference with Secondary Schools at the University of Chicago.

FRIDAY, APRIL 14

11:00 A.M.

Conference of Administrative Officers in the Theater of the Reynolds Club (third floor). Topics for discussion will be presented as follows:

1. Definition of "Elementary" and "Advanced" Courses in the High School with Special Reference to the Content of the Unit.

The topic will be presented by PRINCIPALS ARMSTRONG of the Englewood High School and BROWN of the New Trier Township High School, and by PROFESSORS ANGELL and JUDD of the University of Chicago.

2. Qualitative Standards in High Schools and Colleges. General discussion.

12:30 P.M.

Social Assembly in the Reynolds Club (second floor) under the direction of the Junior Class Society. Singing by a quartette from the Men's Glee Club.

1:15 P.M.

Luncheon in the Hutchinson Commons. Visiting principals and teachers and student competitors in the prize contests and examinations are invited to the Assembly and to the Luncheon.

1:15 P.M.

Luncheon for Administrative Officers in Lexington 14.

2:00-3:00 P.M.

Rooms for rest and informal social intercourse will be found in the Reynolds Club (for men) and in Lexington Hall (for women).

2:15 P.M. (Kent Theater)

Preliminary hearing, before the University Department of Public Speaking, of candidates for place in the Eighteenth Annual Contest in Public Speaking, open to Seniors recommended by the principals of co-operating high schools.

2:15 P.M. (Cobb Lecture Hall, 12A, First Floor)

Prize scholarship examinations in American History, Botany, Chemistry, English, French, German, Latin, Mathematics, and Physics, open to Seniors recommended by the principals of co-operating high schools.

3:00 P.M. DEPARTMENTAL CONFERENCES upon the general topic "Qualitative Standards in High Schools and Colleges"

It is understood that the Conferences may be continued or excursions organized for Saturday morning at the discretion of the officers and members of the respective sections.

5:00 P.M. (Lexington Hall)

Informal Reception by the Neighborhood clubs to visiting high-school girls.

5:00 P.M.

The privileges of the Reynolds Club will be extended to visiting high-school boys. Guides will be provided for those who wish to visit points of interest in the University Quadrangles.

5:00 P.M. (Reynolds Club, Second Floor)

Informal social gatherings for visiting high-school teachers and others.

6:00 P.M.

Visiting high-school pupils will be entertained at dinner: boys in Hutchinson Hall; girls in the Lunch Room of Emmons Blaine Hall, Fifty-ninth Street between Kimbark and Kenwood avenues. Admission by ticket. Tickets will be distributed at the Examinations and at the Public Speaking Preliminaries.

6:00 P.M.

The University will entertain visiting principals and teachers at supper in Lexington Hall.

8:00 P.M. (Harper Assembly Room)

Eighteenth Annual Contest in Public Speaking between representatives of schools in relations with the University.

8:00 P.M.

General Session

Leon Mandel Assembly Hall

PRINCIPAL H. V. CHURCH, J. Sterling Morton High School, Presiding

Music { Organ Recital, 7:45 P.M. Arthur C. Lunn, University of Chicago
The Women's Glee Club of the University of Chicago

Address, "The Qualitative Definition of School Courses," Charles Hubbard Judd, Director, the School of Education, the University of Chicago

SPECIAL NOTICES

On Thursday evening, April 13, in Leon Mandel Assembly Hall, will occur the Chicago-Colorado Intercollegiate Debate on the subject, "Resolved, That Congress Should Adopt a Literacy Test for All European Immigration."

The first regular meeting of the Association of Modern Foreign Language Teachers of the Central West and South will be held at the University of Chicago, Harper 11, on April 15, morning and afternoon. An interesting program will be presented, and all teachers of German and Romance are invited to attend, whether members or not. The Association is composed of secondary and college teachers.

BOOK REVIEWS

How the French Boy Learns to Write. By ROLLO WALTER BROWN.
Cambridge: Harvard University Press, 1915. Pp. ix+260.
\$1.25.

That teachers of English in American schools can learn much from methods employed by the French in instruction in the mother-tongue is the confident assertion with which Professor Brown of Wabash College submits this adequate survey of French classroom methods. The book, based upon the author's observations, presents the courses of study, an illuminating discussion of ideals of rhetoric and composition, an outline of the aims in foreign-language study, and closes with a chapter on the application of some of the features in America.

One lesson in administration is taught by the French practice, that is, that instruction in the mother-tongue may be much improved by a more judicious distribution. The value of training in expression is greatly enhanced by beginning such training early in the pupil's school life, and by maintaining it regularly and persistently throughout the entire period of instruction. The French boy does not come to the point where he leaves behind him unrelated language-lessons to take up theme-writing; he does not leave behind him reading-lessons to take up literature. From the first day to the last he is learning French as a unity. The French untiringly insist upon systematic practice and regular, skilfully graduated progression. Their unified school system, uninterrupted by divisions into primary and secondary departments, is considered an element favorable to systematically unified instruction.

In composition work there is very much instruction in what have come to be considered in America accessory branches. Formal instruction is given in enlarging and organizing vocabulary, in sharpening the feeling for distinctions between shades of meanings. Part of the reading hour is set aside for word discussion, but words are never studied apart from the ideas they represent. Grammar, too, is considered and taught as an essential element of a pupil's equipment for effective expression. Simplified and vivified though it is, yet grammar, real grammar, is dovetailed into the study of literature. A lesson in literature thus becomes the basis, not only for appreciative reading, but for the study of words, of syntax, and rhetoric as well; and to this end such selections are made that they may be set up before the boy as wholesome examples to follow.

The study of foreign languages, Latin especially, is made subservient to thoroughness in the mother-tongue. The French idea is not that they are producing Latin or English or German specialists; but they do believe that of all studies foreign languages can give insight into the French language.

Translation is not entirely relinquished, for some regard is had for exact and creditable translation.

In the presentation of composition work we may learn that prevision in the assignment is of greater value than revision of the theme. Much more reliance for improvement is placed upon enriching and organizing the material before the theme is written; much less reliance is placed upon criticism and correction. We gorge our educational journals with symbols, systems, and schemes for theme-correction; and then we assign an exercise by saying, "Write a three-page theme on childhood recollections." We are afraid to suggest ideas for fear the pupil will use them. It is not enough to have given the boy instruction in the proper use of his tools for effective expression; it is equally necessary to have given him something vital and interesting and well within the scope of his treatment for expression. To this end the French teacher is unrelenting in his zeal to have prepared definite material in the mind of the boy before he sets him to the task of writing; and the art of theme-correcting has not developed to the marvelous extent it has in America.

The book is attractive. Logical in its arrangement and comprehensive in its scope, it presents in readable style Professor Brown's observations.

NOAH E. BASHORE

UNIVERSITY OF CHICAGO

Learning to Earn. By JOHN A. LAPP and CARL H. MOTE. Indianapolis: Bobbs-Merrill Co., 1915. Pp. 421.

The authors have contributed to the literature on vocational education a readable compilation and interpretation of current thought and opinion regarding this much-discussed field of school training. While this opinion is buttressed by facts and figures, the book is essentially a presentation of a philosophy of education.

Like most writers on this subject the authors are critical of the present educational program. At times the criticism seems to be extreme, though undoubtedly it may be deserved in some quarters. For example, in the chapter on "Training for the Home," the following occurs: "In the elementary schools, girls learn the rudiments of reading, writing, and arithmetic, a little about world-geography that means nothing, a bare outline of American political history, a mass of meaningless jargon about English grammar, none of which is intelligible or usable, and a few disconnected facts about human physiology, which, for all practical purposes, might be the physiology of some extinct animal of the antediluvian age. The high school and college merely pursue the search for facts begun in the grades, facts which have nothing whatever to do with the commonest interests of the girl after she has become a woman." There is much material of this character which is calculated to stimulate discussion among school people.

The volume presents a philosophy which is democratic, a program which is all-inclusive, and conclusions which are optimistic. The farm, shop, business, and home are discussed in their relations to the school, and it is shown where and how the school is to serve them.

Perhaps the most original material is to be found in the chapters on "Extension and Correspondence Work" and "The Library and the Worker." An inspiring vision is given of a continuous educational process for all the people when the functions of the library shall have been fully developed to meet the occupational needs of the youth and the adult.

FRANK M. LEAVITT

UNIVERSITY OF CHICAGO

Mediaeval Italy during a Thousand Years. By H. B. COTTERILL.
New York: F. A. Stokes Co., 1915. Pp. xxviii+566. \$2.50.

Mr. Cotterill has written this handbook evidently more for the instruction of the layman than for the edification of the scholar. Since he has chosen this less critical public, it would be unjust, of course, to judge him by the canons of research scholarship. But even within the limits which he has chosen, his book has grave shortcomings.

The volume is frankly a compendium of well-known facts, its claims to usefulness being that it brings together in one volume a mass of material for which an interested reader must generally seek in a number of textbooks. The project of thus bridging the gap between the Roman Empire and the height of Middle Ages is laudable. This is a period of Italian history which has received but scanty attention from the writers of textbooks, except in so far as Italian politics dovetail with the history of the Holy Roman Empire. It is the execution of the project that leaves much to be desired.

Faced with the problem of distilling the essence of the centuries of "confusion worse confounded" of mediaeval Italian history, the author has apparently experienced great difficulty in keeping his facts in proper perspective. Facts he has given us in abundance. There are over five hundred pages of facts, neatly blocked out into periods; yet the book fails. The book fails because the author has not seen fit to co-ordinate his heavy load of facts, to trace for his readers the growth and the continuity of mediaeval Italy. He gives us the mosaic scraps, which we are expected to arrange for ourselves into a glowing picture, but he does not himself paint it for us. Unfortunately the lay reader does not possess the training in historical science which will enable him to form the composite picture. By scattering what he calls his political outline into five blocks, divided according to periods, through the book, the author effectively prevents the reader from forming any impression of continuous social, political, or economic growth. In fact, he has hardly indicated the real significance of the rise of the cities, of the economic expansion of Italy, or of the relations with Byzantium and the Levant.

Mr. Cotterill has further lessened the value of his book by the very facts and factors which he does accentuate. The first 122 pages on the Roman Empire can be found in better form in almost any short history. The author has given so much attention to the "Germanic" empire, in the later parts of his work, that he has been forced to slight his chapters on such peculiarly Italian topics as the Lombard and Tuscan cities, the great seaports, and others. The Norman kingdom in Sicily and Southern Italy gets very scant space, and the relations with the Greek empire almost none.

There is no need to quarrel with the facts presented; they are evidently on good authority. But even if the book is written for the layman, it might at least try to interpret Italian history, if it were only to make the main outlines apparent to the reader unfamiliar with them.

NORMAN S. PARKER

UNIVERSITY OF CHICAGO

Problems in Elementary School Administration. By FRANK P. BACHMAN. New York: School Efficiency Series, World Book Co., 1915. Pp. x+274. \$1.50.

There are two large divisions of this book. The first, Part I, deals with the present educational efficiency and economy of the intermediate school, and the educational opportunity afforded by it. Part II is concerned with the progress and classification of pupils. The author's method is the objective, the statistical one.

Figures representing the results in New York City schools show that, both in keeping pupils from dropping out of school and in promoting them, the intermediate schools have shown a substantial gain over the schools which still have the seventh and eighth grades included in the elementary school. They are also more economical, requiring fewer classrooms, shops, cooking-rooms, gymnasiums, and teachers. The first of these schools were established in New York City in 1905, to relieve congestion in some of the grade buildings, and they still fulfil this function among other more important ones.

Although the author finds the intermediate schools, as organized and administered in New York City, superior to the eight-grade elementary schools in the respects mentioned, he is by no means satisfied with them. He would have the intermediate school, not as a mere method of grouping for reasons of economy, nor even for keeping pupils from dropping out of school and speeding them through the grades. In all this they are doing good service; but the author thinks that he sees a larger reason for their existence. The strongest demand for such an organization is based on the peculiar needs of girls and boys at particular ages, especially at the age of adolescence. To provide a broader field of choice for pupils at this critical age, to make more adequate provision for both sexes, to allow advancement by subjects—these are some of the larger aims toward which Bachman would have the intermediate school work.

No reasonable basis is found for the present elementary curriculum. Only about 41 per cent of the pupils entering the elementary schools complete the course. The requirements are the same for all elementary schools, regardless of which of the fifty-four nationalities or which of the numerous trades, professions, or classes of society may be predominant in their respective sections of the city.

As compared with absences, all other causes of retardation are found to be slight. There is a consistent though slight decrease in the rate of promotion as the number of pupils in the class rises from thirty-five to fifty and above. Though promotion rate, measured by grades, is not greatly affected by the inability of some of the pupils to use the English language, the advance of the particular pupils is very noticeably retarded. It is hard to see how the author could have known always where to trace the cause of retardation, or to give the correct weight to each when more than one cause was operative.

It is in connection with the system of reports, determination of the conditions of overage and promotion, that the most adverse criticism of the New York City system comes out. New York has not adequately met its educational needs, largely because it did not know the extent of its failure.

In 1905 the city superintendent changed the time of making his report from before promotion to after promotion. He has announced since then a steady decline in the number of overage pupils. He has been able to do this by taking the age-grade census in June, after promotion, including only those pupils whose names appeared on the register at that time, and leaving out of consideration entirely the thousands who had been dropped through the year.

The reports referred to above are as typical as they are misrepresentative. Bachman demands some common basis for the determination of retardation and overage. The use of such vague terms as "in a grade," with no understanding as to the time of the year at which the data shall be gathered, and no distinction between a pupil aged twelve years and a day and another aged twelve years and eleven months, makes reports meaningless if not misleading. Without a knowledge of what is being accomplished it is obviously unreasonable to expect efforts at improvement to be well directed.

Many people are complaining that the statistical method is being overworked in education, and are affected with a kind of mental nausea at the sight of figures and statistical tables. Such tables are frequent throughout this work, but in the present instance the method is fully justified, and the conclusions seem on the whole clear and reasonable.

JOSEPH HENRY JOHNSTON

UNIVERSITY OF ILLINOIS

Laboratory and Field Zoology. By ROBERT W. HEGNER. New York: Macmillan, 1915. Pp. v+73.

Laboratory and Field Zoology by Robert W. Hegner follows the same method of procedure as the author's other text, *Practical Zoology*, which it is designed

to supplement. An introductory chapter gives lists of laboratory and field materials and brief directions for the use of the compound microscope. The first chapter of the text proper contains practical directions for the collection, preservation, and rearing of insects. The outlines for the study of the various animal phyla complete the subject-matter of the book.

The animal forms here treated are such as may be easily obtained and are of practical as well as scientific interest, e.g., grasshoppers, houseflies, mosquitoes, and frogs. Wherever advisable the plan of presentation calls for field observations of both the animal and its habitat before the laboratory study is made. The invertebrate subkingdom is very thoroughly treated, but the only vertebrate forms discussed are the frog, the perch, and birds. In the case of the frog, both field and laboratory work are outlined, whereas but one phase is considered for each of the other groups: laboratory for the perch, and field for the birds. Practical suggestions for use in recording observations in the field study of birds include charts and bird calendars.

Hegner's *Laboratory and Field Zoology* is a safe book to put into a student's hands, for instead of making statements about the various animals studied, it follows the vastly better plan of questioning him on those things which he can observe for himself, supplementing these questions occasionally when his own observations would be inadequate. The book is quite devoid of illustrations. Thus any tendency to draw conclusions from diagrams rather than from the actual specimen is inhibited.

For these reasons, and because of the field work outlined in connection with the study of birds, the manual is a worthy supplement to the author's excellent text.

GRACE ADALINE WELLS

STATE NORMAL SCHOOL
LA CROSSE, WIS.

BOOK-NOTES

KLEIN, WILLIAM LIVINGSTON. *Why We Punctuate; or Reason versus Rule in the Use of Marks*. Minneapolis, Minn.: Lancet Publishing Co., 1916.

Pp. xiv+224. \$1.25.

This is the second edition of a very valuable manual of punctuation. Unlike other authors on this subject, Mr. Klein attempts to show the reasonableness of the conventions of punctuation. Woolley's *Handbook* is the extreme type of the dogmatic manual; perhaps the present text suffers in the other direction; that is, Mr. Klein's explanations go into too much detail.

Citizenship Syllabus. Albany: New York State Department of Education, 1916. Pp. 48. Paper.

A valuable outline for use in evening schools where adult immigrants are taught.

The Shakespeare Tercentenary. Washington: National Capitol Press, 1916. Pp. 60. Paper.

Suggestions prepared by the Drama League of America for the celebration of the Shakespeare tercentenary in grades and high schools, and by communities.

Report of the Survey of the Public Schools of Leavenworth, Kansas. Topeka: State Printer, 1915. Pp. 202. Paper.

TIESDEL, FREDERICK M. *A Brief Survey of English and American Literature*.

New York: Macmillan, 1916. Pp. viii+217. \$0.85.

In 208 pages Professor Tiesdel attempts to cover the history of both English and American literature. The superficial character of the attempt is evident from the fact that Dickens is given two paragraphs; Darwin, Lyell, Huxley, Tyndall, and Wallace are lumped together in thirteen and one-half lines; Rossetti receives one paragraph, William Morris one, Poe one, and so on. A perfect example of a poor textbook.

OLIN, ARVIN S. *Outlines in History of Education*. Lawrence, 1916. 3d ed. Pp. 143.

Badly bound reading outlines for a general course in the history of education.

The Essential Place of Religion in Education. Ann Arbor: National Education Association, 1916. Pp. 134. Paper. \$0.30.

A compilation of papers submitted in the competition of the National Education Association. The five prize-winners are given in full, and others are briefed.

BROOK, MARIE K. (Editor). *George Sand, La Mare au Diable*. New York: Scribner, 1916. Pp. x+139.

While this edition is very carefully prepared, the enormous amount of material in grammar and composition is calculated to destroy any enthusiasm for "George Sand's charming story." Each chapter is followed by a Questionnaire, Exercises, and Expressions Idiomatiques. Vocabulary appended.

HARTWELL, SHATTUCK O. *The Overcrowded School and the Platoon Plan*. Cleveland: Survey Committee of the Cleveland Foundation, 1916.

Pp. 77.

This thorough discussion deals in the first instance with the problem of overcrowding in Cleveland, and secondarily with the working out of the Gary plan.

HENDRICK, EARLE RAYMOND. *Constructive Geometry*. New York: Macmillan, 1916. Pp. vi+75. Paper.

A combination text and exercise book in elementary constructive geometry. The author claims that it is the only American notebook in geometric drawing, other texts being English or Continental.

CRANDALL, ERNEST L. *Das deutsche Heft*. New York: American Book Co., 1916. Pp. lxxvii+77.

A first-year exercise book in German composition, prepared by the German faculty of the Washington Irving High School, New York. Accompanied by a teacher's manual by the same author.

BENSON, B. K. *English Derivatives*. Boston: D. C. Heath & Co., 1916. Pp. vii+166.

The arrangement is under root words, although the actual arrangement of root words themselves is far from clear. However, alphabetical indices are given.

SNYDER, FRANKLIN BLISS, and MARTIN, ROBERT GRANT. *A Book of English Literature*. New York: Macmillan, 1916. Pp. xix+889. \$2.25.

Notice later.

MITCHELL, DAVID. *Schools and Classes for Exceptional Children*. Cleveland: Survey Committee of the Cleveland Foundation, 1916. Pp. 122.

O'LEARY, IRIS PROUTY. *Department Store Occupations*. Cleveland: Survey Committee of the Cleveland Foundation, 1916. Pp. 127.

JUDD, CHARLES HUBBARD. *Measuring the Work of the Public School*. Cleveland: Survey Committee of the Cleveland Foundation, 1916. Pp. 290. Comment on these three books later.

WELLS, WEBSTER, and HART, WALTER W. *Plane and Solid Geometry*. Boston: D. C. Heath & Co., 1916. Pp. viii+467.

Comment later.

BENEZET, L. P. *Story of the Map of Europe*. Chicago: Scott, Foresman & Co., 1916. Pp. 277.

An elementary textbook in European history which attempts to trace for uninformed Americans enough of European history to explain the causes of the present war. The best feature of the book is the series of admirably clear maps. The author believes in national divisions along racial lines and devotes one whole chapter to a rather naïve exposition of this doctrine. He sets up international arbitration as a remedy for war.

